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AGRONOMY;

OR THE SCIENCE WHICH RELATES TO THE CONSTITUENT PARTS AND PHYSICAL PROPERTIES OF THE SOIL, &c.—NO. 4.

ALUMINA.

This simple earth is mostly contained in a compound mass, called *potter's earth* or *clay*. Hence the ancient name of argillaceous earth is derived; but, as it is one of the most essential constituents of a salt known by the name of *alum*, modern chemists have thought proper to give it the appellation by which it is at present distinguished. It is composed of a metalic basis, called aluminum, united with oxygen. It must not be confounded with clay, which is a very compound body: clay being a mixture in various proportions, of alumina with silica and oxyde of iron.

Alumina is the earth, which next to silica, is found most frequently and in the greatest abundance in our soils. Clay, into the composition of which alumina always enters, exists in a greater or less degree in every soil, and is also found in extensive strata beneath the surface of the earth. Moreover, alumina forms a constituent part of most stones, and in some it is the principal ingredient. Organic substances contain a very small portion of it, and a trifling quantity is found in the ashes of most vegetable substances.

This earth is of great importance to the agriculturist. As a constituent part of clay, it always enters into the composition of vegetable mold. A perfect acquaintance with it is also essential to the agriculturist, in order to enable him duly to appreciate the influence of clay upon his fields, and the improvement or deterioration of soil which it occasions. Clay, likewise deserves attention on account of its utility in the manufacture of brick, tiles and pottery. All these considerations should induce the agriculturist attentively to study, first, the properties of pure alumina, and secondly, those of clay.

Although the utility of clay and its employment in the fabrication of bricks, and tiles and earthen ware, have caused it to be known from the very earliest periods, it was not until very recently, regarded as an elementary substance. It was for a long time confounded with earth in general, and afterwards assimilated sometimes with lime and at others with silica, and supposed to have acquired an unusual character by the action of acids and other substances. It was not until the middle of the last century that alumina was proved to be a peculiar earth, which ought not to be confounded with others; and it was only at the commencement of the present century that its metalic basis was discovered. Notwithstanding the abundance of alumina, it is never found in nature in a state of absolute purity; it is usually combined with other earths and metalic oxydes, and, sometimes also with acids.

It is by chemical process alone that alumina can be obtained perfectly pure and separate from all foreign bodies. The easiest and most common method of obtaining it in this state, is

to prepare it from alum, in which it exists in combination with sulphuric acid. The alum having been dissolved in water, the sulphuric acid is nutralized with an alkali, and the alum precipitated. Certain other processes are however, necessary to purify it completely from the other substances with which it is mixed.

The physical properties of this earth are varied to a certain extent, by the means which are taken to separate it from the substances with which it is united, and by the quantity and quality of the agents employed. Properties appertaining to clay have frequently been ascribed to alumina, and hence, undoubtedly, have arisen the variations in the accounts which different chemists have given of it. These discrepancies are not, however, of sufficient magnitude to cause alumina to be confounded with other earths.

Alumina appears to have a greater affinity for water than any of the other elementary earths, since it retains a greater quantity of it; it likewise contracts a much stronger mechanical cohesion with this fluid than the others. But this latter property is found to differ considerbaly in various preparations that are made with alumina.

A Visit to the Shakers of Mercer Co., Ky.,---Origin of the Society---Their Industrial Operations, &c.

The truly upright and moral character of the Shakers, their kindness, industry, thrift and systematic operations have frequently induced us to visit them. We recently spent several days with them at Pleasant Hill, in Mercer county, in examining their farms, orchards, flocks and herds—some account of which may prove interesting and profitable to our readers, to some of whom, the origin, history and peculiarity of the sect but little is known. Of these we propose first, briefly to speak. We gather the following from authentic records of the society.

In the month of September 1776, the people who fully organized the first society called *Shakers* settled in the woods of Watervleit, about seven miles north-west of Albany, New York, under the ministration of "Mother Ann Lee," in whom they claim that the prophecy of the second appearing of Christ has already been fulfilled.

Ann Lee was born in Manchester, England, in the year 1736. In her childhood she manifested a bright and active genius, was remarkably sagacious, but serious and thoughtful and never addicted to play like other children. In early childhood she was the subject of religious impressions, and was peculiarly favored with heavenly visions. She was married to a man by the name of Stanley, and had four children, all of whom died in infancy. For years she labored under peculiar and powerful exercises of mind, and was finally, in the 23d year of her age united with a religious society, then under the guidance of James and Jane Wardley. For a period of years, the history informs us, she was the subject of wonderful visions of divine manifestations, in which the whole spiritual world seemed displayed before her. In these extraordinary manifestations she claims to have a "full and clear view of the foundation of all human depravity, and of the very act of transgression, committed by the first man and first woman in the garden of Eden." It is from these revelations that the doctrines which mark the peculiarity of the society called *Shakers*, are predicated.

About this time, under the ministration of James and Jane Wardley, a remarkable revival of religion broke out which caused great excitement among the people, many of whom were frequently seized with violent, involuntary rolling, jerking and trembling, and which subsequently characterized the wonderful "Kentucky revival," and which was pronounced by some as *witchcraft, enthusiasm, fanaticicism, delusion*, &c. From these involuntary physical exercises the name of *Shaker* was derived.

About the year 1774, "Mother Ann," by special revelation was directed to come to America, and at the same time received the divine promise that the Millennial Church should be established in that country. This revelation was communicated to the society and was soon confirmed by signs, visions and extraordinary manifestations. She accordingly, with eight other individuals, on the 19th of May, 1774 embarked at Liverpool in the ship Mariah, for New York. During the passage they attempted to "praise God in *songs and dances*," which greatly annoyed the captain, who threatened to throw them overboard. About this time the ship sprung a leak by the starting of a plank between wind and water, which gained on the pumps so fast that the captain and crew became greatly alarmed. But Mother Ann said to the captain, "be of good cheer; there shall not a hair of your head perish. We shall all arrive safe in America. I just now saw two bright angels of God standing by the mast through whom I received this promise." Shortly after this a large wave struck the ship with violence

and the loose plank was instantly closed to its place, and the ship arrived safe in New York on the 6th of August following.

From the peculiarities which marked the life and character of this remarkable woman, she met with much persecution. She was often stoned and othwerwise ill-treated, and several times imprisoned in England. After her arrival in America, and during a revival in New Lebanon, New York, she and others of her followers were averse to the war, in which this country was then engaged with Great Britain. Advantage was taken of this circumstance to represent them as enemies to the country, and they were accordingly accused of treason, and she and a number of the leading members were cast into prison in Albany; but as no charge was sustained against them, after a few months they were discharged.

Since this society was established in New York, three others have been established in that State; two in Connecticut; four in Massachusetts; two in New Hampshire; four in Ohio and two in Kentucky.

The Shaker society in Mercer county, Kentucky was established in 1807, shortly after or during the "Kentucky revival." It now embraces five families and between three and four hundred members. Two of these families are termed receiving families, into which persons who propose to join the society, pass a probationary season. The three other families have passed to a higher order, at the head of which there are two members, who hold the property in perpetual trust and manage the business affairs of the society. There are also two male and two female members, denominated the Ministry, who are consulted in all important spiritual and temporal matters.

They claim authority from the scriptures for their peculiar mode of worship, which is chiefly by singing and dancing. They are Spiritualists in the modern acceptation of the term, and profess to be guided in many of their affairs by special revelation from the spirit world. To judge them by the scripture standard, "by their fruits," there are no people living more strictly honest, upright and virtuous, and who live in greater love and harmony one with another, and we believe they constitute the only organized body that has long been sustained where the property is held in common among its members; but with them the great ruling passion of the human family—selfiishness—appears to be entirely subdued.

The Shakers neither marry nor are given in marriage. Their numbers are increased by the addition of orphan children from the country and the various cities around. These children are brought up with the greatest tenderness and care, and are educated in all the branches usually taught in the common schools.

Each dwelling is divided alike, with a passage in the centre, and a flight of stairs on each side, one leading to the rooms for the men on one side, and the other to those for the women on the other side.

Their Farm.—When this society was first established in Kentucky thy were extremely poor, and began farming upon about one hundred acres of land. They now own about five thousand acres, worth from $50 to $100 an acre. Their dwelling and outhouses are large, commodious and well built, chiefly of brick and stone. The most of their land is enclosed and subdivided with substantial stone walls. They have hired one man for twelve years who has devoted his whole time to building this kind of fence, aided from time to time by others. They have now about forty miles of this wall completed which cost about $1,000 a mile, or $40,000 for the whole.

Their Stock.—The whole number of cattle upon the farm is about 500 head, mostly full blood Short-horns, some of which are from the best imported stock in the State. They average about 40 head of milch cows to each family.—The cattle are bred with a view to the improvement of their milking qualities, and in this respect we think that breeders generally in Kentucky, pay so little regard to this quality that their stock is permanently injured by it. Their system of feeding is of the most economical character, and best calculated to promote the growth and sustain the health of the animals. The hay, oats and straw are stored and cut upon the floor above. Their cutting machines are of the Sinclair pattern, propelled by horse power and will cut a ton of feed in a short time. Their cattle are arranged in stalls on each side of the barn, with a passage between, in this passage is a railway upon which is run a large box for mixing and delivering the food, which is wet with water supplied by a pump from a cistern immediately under the passage. The meal, which is of corn and rye, ground fine, is stored above and is let down into the box, through a spout. The objection raised by some to this method of feeding in cold weather is entirely imaginary. We learned that they have experienced no serious difficulty from freezing, even in the coldest weather.

They make no calculation on raising grain beyond the wants of the several families and their

stock. In 1855 they harvested from 100 acres 3,100 bushels of wheat, equal to 31 bushels per acre. The crop of the present season is of superior quality, but the yield was but 18 bushels per acre.

Fruit Growing and Preserving constitutes one of the chief sources of revenue to this society. Besides the large amount of apples, peaches, pears and strawberries that are dried and preserved for their own use, they preserve large quantitities annually for sale. In 1855, which was a fruitful year, they preserved in sugar 30 tons of different kinds of fruit. The present year, their leading varieties having been cut off, the quantity put up is but about 15 tons, chiefly of strawberries, raspberries, cherries, plums, and plum jelly; nearly half of the whole is strawberries, and the quantity of these would have been greatly increased but for the severe drought which set in just as the fruit was ripening.

Other Matters.—In addition to their annual sales of Durham cattle and preserved fruits, the society manufacture a large number of brooms, which from their superior quality and neatness of finish find ready sale in our markets at an advanced price upon the ordinary article. Of the number of acres in broom corn the present year we did not inquire, but besides what they cultivate themselves, they hire the neighboring farmers to grow a considerable quantity, and from what we saw should estimate the land occupied with this crop at several hundred acres; the present season the crop has been considerably cut short for want of rain.

They also grow and put up a large amount of garden seeds which are sold in Kentucky and other southern States.

Each family raise a few pounds of silk, which they manufacture exclusively for their own use. They also keep a flock of the finest Saxony sheep, the wool of which is combed and manufactured into fabrics for family use.

Their houses are furnished with every convenience calculated to reduce the labor of the various domestic operations. The village is supplied with water from a large spring about half a mile distant, which is forced up into a reservoir and is conveyed in pipes directly to every apartment in the premises where it is needed. Machinery is employed for washing, wringing, and smoothing cloths, and in the operations of baking, &c., &c.

There is a post office at the village, but no tavern is kept, yet a large number of persons put up almost daily with them for which no charge is made. This we are told is often practiced to an extent little short of direct imposition.

In point of good morals, neighborly kindness, economy, industry and thrift, the shakers may be regarded as a model people.

[Written for the Valley Farmer.]

Meteorology for Little Mary and Neighbor Muggins.

After Mr. Thomson had taken a copious draught from the *inside* of the pitcher, he felt so much refreshed that he was disposed again to talk about the *outside*.

"You see," said he, "that the pitcher must be cooled in order to produce a deposition of dew. The temperature at which dew first begins to be formed is called the *dew point*.—Sometimes the air is so near to the state of saturation that spring water poured into a vessel will form dew. Sometimes dew will not be deposited unless ice is put into the vessel. In the latter case, there is of course, less moisture in the air than there is in the former. The difference between the temperature of the air and the dew point shows the degree of moisture in the air."

"I think I understand that. But, friend Thomson, if there is but very little moisture in the air the ground may not be cold enough to squeeze out the moisture."

"That is true; and in such a state of things stirring the ground would be injurious, since it would expose a greater quantity of ground to be dried. But this state of things, I think, does not often take place in our climate. Besides, if the ground is well pulverized, nothing is required but that the surface should be kept open. The ground should be plowed deep at first, and in dry weather the *crust* which closes the pores, should be broken. In some tropical countries, you know, they have a rainy season, which covers the earth with vegetation; then comes a dry season, in which there is no rain for months. But even in the dry season the air is abundantly supplied with moi ture, and the plants continue to grow, because the moisture is condensed and taken into their vessels. This power of the air to hold vapor is a wonderful thing, Mary. Without it there would be neither an animal nor a plant on the earth. The globe would be nothing but one great desert, if the winds did not distribute the moisture over its surface."

"What makes the winds, Pa?

"The different degress of heat in different parts of the earth. In a warm room, if you open the door a little and hold a candle at the

upper part, you will see the flame bend outwards. If you hold it at the bottom part, the flame will bend inwards. This shows that a current of air is coming into the room below, and another current going out above. These are two little winds. Well, there are two winds blowing over the earth in the same way."

"Two winds, friend Thomson! You mean a hundred or a thousand of them."

"No' neighbor Muggins, there are not so many winds as you think. There are really only two great winds."

You may say what you please, friend Thomson, but a Philiadelphia lawyer couldn't convince me of that. What! only two winds! Why, I can show you a dozen or two nearly every day."

Well, suppose a house with an opening above the door and one below. There will be, as I have said, two currents of air, which we may call north and south winds. But suppose one of these winds, the south wind for instance, to strike against the bureau and be turned out of its course, would it be a south wind then?

"No, I suppose not."

"Still it would be the same wind as before, though turned in a different direction. It might, according to circumstances, seem to come from the east or from the west, yet it would not be a new wind, but the same wind turned from its course. The earth, so far as winds are concerned, is like the warm room. In the room there are two currents of air caused by the heat. The warm air rises and goes out at the top of the door. This produces a partial vacuum, or empty space, and the cold air comes in at the bottom to fill it. So, when the sun heats the earth at the equator, the warm air rises, the cold air from the poles rushes in to fill its place, while the warm air passes back towards the poles. This process is continually going on in a kind of circle. The cold air comes from the poles, is heated, rises, and flows back, to go through the same course again. To those north of the sun, the air going towards the warm regions forms a north wind, and that returning to the cold regions forms a south wind. On the other side of the sun, the reverse would be true."

"But, Pa, why does not the warm air go out of the room below, and the cold air above?"

"Well, Mary, the effect of heat is to expand everything—to make it larger. If you take a bladder half full of air and hold it to the fire, the bladder will swell out and become twice as large as it was. No new air has entered the bladder; there is just the same quantity as before; but it has become twice as large. Now, a pint of this expanded air is only half as heavy as was a pint of the air before it was heated. Among fluids the lighter rises above the heavier. If you pour oil into water, what takes place?"

"Why, the oil comes to the top, Pa."

"It does so because it is lighter than the water. A portion of air, when heated, becomes lighter, and rises till it finds air no heavier than itself. You saw the boys send up a paper balloon the other day—do you know how they made it go up?"

"Why, they made a fire of sponge and alcohol and that drove it up."

"But if they had made a fire under a board, the fire would not have driven the board up."

"No, the board is too heavy."

"Well, the fire would not have made the paper ascend if it had been rolled together. It was air going up that took the balloon with it. The fire heated the air in the balloon; the air being made lighter, rose and took the balloon up. If it could have got out it would have gone off and left the balloon; for the weight of the balloon kept the light air from going as far as it would have gone. Do you now understand why the heated air goes out at the top of the room, and not at the bottom?"

"Oh, yes; the light air rises up as oil does in water."

"But, friend Thomson, I want to know where you shove in your bureaus, and change a north wind to an east or a west wind. Besides, it seems to me that the wind which blows from the south, being away above us, is no wind at all to us, and that we ought to have but one wind, a north wind. Only imagine a north wind all the time."

"Well, neighbor Muggins, your observation is a very natural one. The bureau,—but this is a very sultry day. I think you must be as tired of listening to me as I am of talking.—Little Mary is beginning to look sleepy. Suppose we put off our conversation till to-morrow."

"Well, I should like to know something about that bureau affair, and so I will come over."

[TO BE CONTINUED.]

ALL lands on which clover or the grasses are grown, must either have lime in them naturally, or that mineral must be artificially supplied.—It matters but little whether it be supplied in the form of stone-lime, oyster lime, or marl.

MOULD is indispensable in every soil, and a healthy supply can alone be preserved through the cultivation of clover and the grasses, by the turning of green crops, or by the application of composts rich in the elements of mould.—*Ex.*

WATER ROTTING HEMP--METHOD OF CONSTRUCTING THE VATS.

By request we introduced in the March number of the Valley Farmer, an article on the culture of hemp. We then promised at a future time to comply fully with our correspondent's wish, and extend the subject to the process of Water-rotting.

Water-rotted hemp is chiefly employed for naval purposes, and none but the best should be submitted to this process. Hemp that is to be water-rotted should from the beginning be handled with great care. In cutting, the straw should be kept straight and none should be broken or crossed in the bundles, and the butts should be made even before it is laid down by the cutter. This is important both to avoid waste in hackling and for the appearance of the staple.

The proper time to cut hemp can be determined by the appearance of the staminate or male plants. These mature first, and when they have cast most of their follen or dust, and begin to assume a yellowish cast, the crop may be cut. If allowed to stand too long, the rain is liable to stain these stems and thereby materially injure the appearance and quality of the crop.

After hemp has been spread and exposed to the sun a day or two, the process may be more safely carried on when put in shocks, without being bound up in bundles; this method protects it from injury from rains and heavy dews, and preserves a more bright and lively color. It should be thoroughly cured before being bound up into bundles and stacked. This will require more or less time according to the weather. Hemp that is from six to eight feet in length is the most suitable for water-rotting. All the stained, broken and inferior portions should be laid aside for dew rotting.

The most proper season for economical and complete water-rotting is immediately after the hemp is sufficiently cured. If done at this season, the labor and expense of stacking may be saved. At this period too, the hemp rots much more speedily than in cooler weather. The time required for rotting, is governed entirely by the temperature of the water. It is by putrifactive fermentation that the process is accomplished, and the most suitable temperature for this is from 60 to 65 degrees of Fahrenheit's scale.

In the month of September it will require from five to eight days to complete the process; in Octorber, from seven to ten days; in November, from ten to fourteen days; in December, from fourteen to twenty-one days, according to the weather. If the water is frozen the process is slow and imperfect.

The chief object in rotting hemp is to remove the vegetable albumen which causes the lint to adhere firmly to the stem in the unrotted state. This may be accomplished more perfectly with less injury to the appearance and strength of the lint by the proper use of steam, than by any other means yet discovered, and it only remains for the invention and construction of suitable aparatus to perform the work expeditiously and economically. To some degree this has already been accomplished, and we hope the day is not far distant when some inventive mind will be directed to the subject and render the process complete.

In boiling water this vegetable albumen is coagulated, and is completely deprived of its solubility, but the temperature of steam may be so regulated as to accomplish the work in a few hours.

METHOD OF CONSTRUCTING THE VATS.

The first thing to be done in preparing for the business of water-rotting hemp, is to select a suitable site where a bold spring is at command, with sufficient elevation to admit of conveying the water into the pools, and to draw it off when necessary: water that is free from sediment or mud should be secured. Muddy water will not only injure the quality of the fiber, but will greatly effect its appearance.

Vats, or pools, are sometimes made by simply digging into the earth, but to this method there are objections—they are subject to leakage, and the clay from the bottom and sides will be constantly liable to disintegration and mixture with the hemp. Vats are best constructed of brick or stone and cemented with water lime. They should be four feet deep, and of the length and depth suited to the quantity of hemp to be rotted. Sixteen feet wide by 75 feet long would be convenient dimensions. In laying up the side walls, two upright pieces of timber to each tier of hemp should be permanently secured to the walls; through these uprights mortices are made, into which cross timbers are keyed to confine the hemp down when the water is let in. Hemp, when first put into the vat is very buoyant, and requires a considerable strength or weight to keep it under water, and if the spring is a bold one, the water should be let in with caution. A pipe should be inserted in the wall, at the bottom, for the purpose of drawing off the water as occasion may require. A swinging crane, with a windlass should be erected at the side of the vat for the purpose of hoisting the hemp in and out, and delivering it into the carts.

The most convenient mode of arranging the hemp straw for water-rotting, is to bind together twenty-five or thirty bundles with three strong bands. These bundles are readily handled with the crane. The method formerly practiced of taking the wet hemp out of the vats by hand, was a most laborious and unhealthy one. After the hemp is placed in the vat, the beams or levers to confine it down, should be placed across, with the ends in the mortices in the uprights and firmly keyed down, so as to keep the hemp entirely under water, when the water may be let in.

To determine when the hemp is sufficiently rotted, will require some experience and observation, and care should be taken not to allow it to be over-rotted, this will render it entirely unfit for the purpose for which it is designed. If any portion should come out of the vat not sufficiently rotted, it may be spread out for a few days, as in dew rotting, to complete the process; the water in the vat having extracted the coloring matter, the color of the lint is not injured by this exposure. When the hemp has been in the vat for the shortest period named for the different seasons, it should be examined by drawing out a few straws from different bundles, and if sufficiently rotted it will emit an unpleasant oder, the lint will be slimy and will easily separate from the wood; in attempting to bend the stem it will break short. It can be further tested by drying the straws and examining it as in the process of dew-rotting, though in applying this latter test it need not be expected that the fiber will separate from the stem as readily as when dew-rotted; but experience will soon enable the operator to determine the proper degree of watering.

When the hemp is sufficiently rotted, a convenient piece of grass land should be chosen upon which to spread it. It can be raised from the vat and discharged directly from the crane into the carts. When delivered on the ground, the bundles should be opened, so as to facilitate drainage, when this is accomplished so as to be handled with ease, it should be spread out to dry. If not well drained, the unbundling and spreading is the most unpleasant part of the operation. The entire handling should be performed with care, to guard against breaking or in any way crossing and tangling the straw, and above all the butts should always be kept even. Upon regarding these rules, much of the value of the staple depends. The breaking and hackling of water-rotted hemp also requires more care than is usually bestowed upon the common dew-rotted article. The hand of hemp, in dressing, should not exceed 1-2 or 1-3 of a pound in weight in order to perform the work neatly and economically. When the hemp is dressed, it should be put up in well prepared bales of about 400 or 500 pounds each, and covered with bagging and secured with bale ropes. The manner of forming the hands of water-rotted hemp for baling for the U. S. Navy, differs from that of the common dew-rotted hemp, inasmuch as the hands are not doubled in the middle, but the small end of the handle is folded over and doubled without twisting, to make it just the length it is desired to have the bale. By changing the ends alternately the bale is carried up level.

The process of water-rotting hemp in the United States is yet in its infancy, and many hemp growers are deterred from preparing their hemp in this way for market, on account of its *imagined* intricacy and the expense of the fixtures. The government is now extending every encouragement for the business. Col. C. J. Sanders is the agent at Lexington, for the purchase of hemp in Kentucky, and we have no doubt that if the farmers of Missouri would embark in the business of water-rotting hemp, the government would at once appoint an agency in that State. The quantity of American grown hemp now used for the U. S. Navy, is but a fraction compared with the amount of imported hemp. The American article is found superior to any other, and at the price which the agent is now paying ($280 per ton), it would seem to be more remunerative than the price obtained for that which is dew-rotted.

If there are any other matters connected with the business upon which our Missouri readers would wish information, we shall be at all times ready to communicate it, so far as it is in our powor to do so.

Of the mode of treament of dew-rotting hemp, we presume that all who are interested in the business, are sufficiently familiar without requiring anything from us on the subject.

Packing Eggs for Winter Use.

About Christmas eggs are very scarce, and consequently high. With little care in the summer, when they are abundant, they may be put up so as to keep sound and fresh until a new supply can be had in the spring. One of the best ways we have tried for packing eggs so as to keep them long, is to pack them in charcoal dust, in boxes, by setting them on end; put the boxes in a cool, dry place, and turn them over as often as once in two days. Put the boxes in some place where they are sure to be seen, or

they will be forgotten and the turning neglected. Another plan, requiring less attention, and may answer just as well, is to pack the eggs in large earthen jars, and fill them with lime-water, made by pouring water on quick-lime and letting it stand a day or two covered. The finer particles of the lime which run off with the water is deposited upon the shells of the eggs, and fills the pores and keeps the eggs perfectly sweet for a long time, even should the yolk settle down against the shells.

QUALITIES OF SOIL.

Much is said in all agricultural works about draining, trenching, deep plowing, pulverizing, fertilizing, &c., to fit the soil for the most ample return for the husbandman's labors. Now all this has a deep philosophy at the bottom of it, which if understood, every farmer may at once be his own judge of these matters.

In the first place, a soil must possess the elements of productiveness, or in the farmer's language it must be "rich," or it will not produce well. It must be well supplied with all the elements which enter into vegetation, and especially into the farmer's crops. The most of our common soils in their natural state possess these elements.

In the second place, the soil must be in such a loose, friable condition that the roots can penetrate it easily, so that all their fine branches can go without hindrance among the particles of earth and gather up such nourishment as is required. The roots of vegetation are its food-gatherers; and they must have a free and easy course or they cannot furnish a good supply.—It is necessary that they travel considerable distance and throw out their branches in every direction to get the variety and amount that is needed. The plant grows just in proportion to the amount and variety of food that the roots find. To facilitate this process, the soil must be soft and easily penetrated.

In the third place, the soil must be moist, or the roots cannot get their food from it. Water is to the food for plants, what the gastric juice is to our food, it is the universal solvent. But it is only moisture that is wanted; it is not a deluge of water. Too much water dilutes the food too much, besides actually drowning the roots of most vegetables. Hence standing water is always injurious to vegetation.

To prevent this, draining, trenching, or deep plowing is often necessary. It is usually the case that soils are underlaid with a hard, compact subsoil, impervious to water. In times of heavy rains, this often holds the water from settling away, and thus keeps the soil above it completely saturated for days and even weeks, or till it dries by evaporation from above. In all such instances the growth of vegetation is checked, and it is often rendered sickly or destroyed.

All the various processes to which we have referred, such as draining, pulverizing, &c., are designed to secure the proper lightness and humidity of the soil. We have no doubt but that the atmosphere should permeate the soil, or fill up the spaces between the particles; it is doubtless necessary to the growth of the plants. But if the roots are immersed in water the atmosphere is shut out. Or if the soil is so compact as to adhere like rock, it is nearly, if not quite, prevented from entering. What is wanted then, is a light or loose, fertile soil, deeper than any roots will ever go, kept constantly moist and never completely flooded.

There is a constant evaporation from the surface, and consequently a constant rising of water from below, which causes a continual change of water in the same soil. There should be moisture enough below to supply the deficit constantly occasioned by evaporation. The lighter or looser the soil is the slower this evaporation goes on; and hence a loose soil resists a drouth longer than a compact one. Where a soil is too wet, it soon becomes too compact, and thus destroys the quality of lightness which is the first essential. Almost everything in agriculture depends upon the state of the soil.

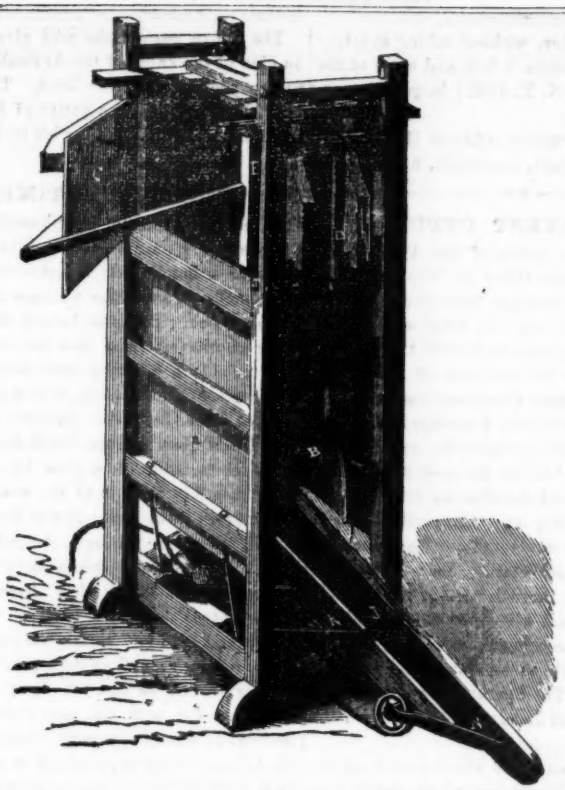
PLANTING.

A man in Farmington, Mass., has invented a corn planter that takes away all the work of planting and turns it into a dignified amusement. It is of the shape and size of a walking staff; and now the planter, instead of going forth with hoe in hand.

"Bent to the earth in hard but healthful toil,"

takes his planting cane and walks back and forth across his field, lord of the soil he treads upon, while his brisk and obedient cane plants his corn and beans along his track. Away with toil! It is being converted into play. The dignity of manhood is being attained. Canes do the planting, while men only walk in morning pleasure.

Still another planter has come to light since writing the above. It is a boot with the planter in the heel. It can be made for horses or men. Verily, the whole earth ought to be planted, when it can be done so easy.



Dederick's Improved Portable Lever Vertical Hay Press.

The above cut represents *Dederick's Improved Portable Lever Vertical Hay Press*, patented May 16th and June 6th 1856. The improvement claimed for this press, is the impossibility of the follower canting or bending against the sides of the press during the operation of pressing, and the combination of mechanical powers that are operated to do the work, and the ease and facility with which it can be removed from field to field where the hay is stacked, and the expedition with which the hay can be baled.

It is operated, as seen in the cut, by two parallel toggle joints and levers, so arranged that one lever is near one end, and the other lever is near the other end of the follower; and as the arms of each set of these parallel toggles are of the same length, and connected together at exactly the same distance on the follower, and at their outer ends it will at once be seen that the follower must move directly vertical, obviating the great friction which is caused in the old presses where the levers work in opposite directions, admitting the whole to be lighter and more easily managed.

From the engraving it will be seen that when the door, C, is closed the head is moved over to either side at pleasure. The hay or other material is then thrown in, and when the box is tramped full the head is moved back again, the power being then applied to the parallel levers, J, K, through the arrangement of block and tackel and pulleys, N, R, R, the follower, B, is pressed upwards against the hay with a power which is as simple as it is great. The door, C, and also a similar door on the opposite side, is then opened; the bale is then bound, the ends of it being relieved by loosening the ends of the bar or handle, D; it is taken out from either side at pleasure. The doors operate so easy that a boy can unlatch and open them with one hand.

These presses are operated by a horse attached to a capstan, the horse going round only five times on an eight feet sweep to make a bale.

In a No. 2 press, which makes 300 lb. bales, two men, and a boy to attend the horse, it is said, will bale from six to eight tons of hay per day. These presses can be removed as easily

as a common thresher, without taking apart.—The No. 2 press weighs 2,500, and costs at the factory in Albany, N. Y. $140; larger presses, from $165 to $175.

For further information address Hugh Dickson or Pitkin Brothers, Louisville, Ky.

THE PATENT OFFICE.

We have before spoken of the Agricultural Bureau in the Patent Office at Washington.—We regard it of immense importance to the country and would keep our readers informed of its doings. Its aim is to benefit Agriculture, and thus promote the interests of the whole country. The present Congress has made an appropriation of $30,000. A further appropriation of $70,000 will probably be asked soon, making $100,000, besides the cost of printing, binding, packing and distributing 210,000 copies of the Annual Report. About $20,000 are to be expended for seeds and cuttings, some of which are already purchased. Last year about twenty varieties of English turnips were distributed; eleven of them were approved, and about forty bushels of the approved seed has already arrived in New York, to be distributed for further experiment. The Bureau have ordered 400 bushels of peas, and 700 bushels of Early York cabbage seed.

One thousand bushels of wheat have been ordered from the Mediteranean, which will be distributed with the especial view to "cross fecundation," with the hope of thereby securing valuable varieties of this standard grain.

Dr. Parker, U. S. Commissioner to China, is to make an excursion this season through the northern portion of that empire, and has $1,000 placed at his disposal for the purchase of seeds.

Mr. W. T. Dennis has been commissioned to visit every State, report on its grasses, both native and foreign, and procure seed for distribution.

Dr. T. C. Jackson, of Boston, is permanently engaged in chemical experiments of agricultural value. One of these has proved that oil worth seventy-five cents per gallon can be extracted from cotton seed, (hitherto worthless) leaving a cake worth three cents per pound. Another analysis shows that the cob of Indian corn only contains three and a half per cent of nutritive matter. Experiments are to be carried on, determining the comparative amount of nutriment in cereals—the amount of tanin in barks and other materials—the amount of phosphoric acid in the worn-out soils of the Atlantic as compared with the virgin soils of the West, &c., &c.

The above paragraphs will give our readers an idea of the value of the Agricultural Bureau to the yeomanry of our land. The Director, D. J. Browne, Esq., is a native of Exeter, N. H. and admirably qualified for his task.

STEAM-BENT TIMBER.

In early times, our plow handles were made by inserting a pin into the upright at right-angles, for a handle; or sometimes cows horns were made to serve the purpose of giving the proper crook. But the farmer wishing something moresubstantial and perfect, would cut into the side of a living tree, securing a piece the length of the handles, with a portion of the root to form the turn. In later years it was found that good timber could be bent so as to form the handles of a plow by sawing one or two ganes into the end of the wood and steaming the part to be bent; it was kept in place by a nail or screw through the end. But more recently, bending machines have been invented, so perfect that plow handles and the larger pieces for the elbows of horse rakes, wagon and carriage shafts are bent with ease and facility, as well as the rims for wagon and carrige wheels, so that wheels are made of but two pieces for each rim, and these are made of the best of straight grained timber, whereas upon the old plan it required six or more pieces to form the felly, which were necessarily cut across the grain, rendering the parts comparatively weak and liable to constant breakage.

This bending process has also been applied to every variety of crooked cabinet work, bending mahogony, black walnut and other fine woods in every conceivable form that fancy or fashion may dictate in the finest departments of the cabinet-maker's art.

But improvement has not stopped here.—Larger and more powerful machines have been made, that will bend timber into knees suitable for the largest ships in the navy, which are found under the most severe and thorough trials to be stronger than knees having the natural bend. Such has been the demand for knees for ship building, that our entire forests upon the rivers and sea coasts have been searched for them. It is from the root and that part of the tree immediately above ground that these knees are taken, at great labor and cost, leaving thousands of tons of the most valuable timber from the remainder of the trees to waste and rot in the woods.

In order to test the relative strength of the natural and steam-bent knees, some interesting

experiments have recently been conducted at the "Novelty Works," in the city of New York, under the inspection of B. F. Delano, Esq., Naval constructor, Brooklyn, and Lieut. Worden, U. S. N., by order of the Secretary of the Navy, and were made at the request of R. H. Belden, President of the American Timber Bending Company, whose works are located at Green Point, Mass. We find in the Scientific American, a full report of the trial, the most important results of which we publish for the benefit of our farming readers and mechanics in general.

The machine for this trial was of the most substantial character, made entirely of iron, and the force applied is the most powerful known—the haydraulic press.

The first experiment was with a machine-bent knee, with a side force of 10 1-2 inches, with a leverage of 5 feet 4 1-2 inches; it was sprung or squeezed inward by the press, a distance of one inch, by 7,500 pounds pressure, and two inches by 10,000 pounds pressure.

The experiment with the *natural* knee of 10 1-2 inches side force, with power applied in the same manner, gave a lower degree of strength. It was sprung inward one inch by 5,500 pounds pressure, and two inches by 9,500 pounds pressure.

The next machine-bent knee, of the same siding (10 1-2 inches) was sprung one inch by 9,500 pounds pressure, and two inches by 11,000 pounds pressure.

The next *natural* knee, of the same siding and angle as the bent knee, was sprung one inch by 7,500 pounds pressure, and two inches by 10,500 pounds pressure. These experiments were of the crunshing character, operating in the direction to squeeze the ends of the knees together.

The hydraulic press was then reversed for the purpose of forcing the knees *outward*, riving them apart. It was an interesting trial, as it was supposed by many that a knee or stick of artificial bent timber could be easily brought back to its original shape, but it was found more difficult to force it outward than inward.

A bent knee of 10 1-2 inches siding, with a leverage of 5 feet 4 1-2 inches, was sprung *outward* one inch by a pressure of 14,000 pounds, and two inches by a pressure of 22,000 pounds.

The question was then raised that the pieces of timber which were bolted on the knee to represent the deck beam and the side of the ship, as they butted closely together, greatly increased the power required to spring the knee outward. For the purpose of testing this, the end of the beam was cut off, so that the ends of the timbers were entirely open and clear of each other. The process was continued until the knee had sprung outward *ten inches*, when it was taken off, and it went back *five inches*.—The pressure was then applied the second time, and upon reaching the point where the strain had been taken off at the first trial, it required to spring it one inch, 28,000 pounds of pressure, thus showing that it required more than double the power to strain outward than inward.—The knee was sprung ten inches without the least break, at a pressure on the last half inch of 38,500 pounds.

The last *natural* knee, of the same angle as the foregoing *bent* knee, with siding of 10 1-2 inches, was a remarkably fine specimen, with a leverage of 5 feet 4 1-2 inches, it required to spring it outwards one inch, 22,500 pounds pressure, at this point it broke near the centre of the throat. The machine-bent knees proved to possess greater elacticity than the natural ones, and after springing them inward and outward some distance, and then allowing them to go back, upon the pressure being applied the second time, it was found in one trial, that the knee sustained a slightly greater pressure, but in another, about six per cent less.

HAGAR'S IMPROVED HARROW.

"Man hath sought out many inventions," says the scriptures. Among the latest is a new Harrow which is said to do what is required of it as becomes a harrow "of the best blood."—Its improvement is in the manner of adjusting the teeth. By this improvement, the teeth can easily be adjusted in an oblique or upright position, as preferred. They can also be raised or lowered, and held firmly, so as to harrow deep or shallow at the option of the cultivator. The front and rear sides of the teeth are held by cast iron brackets attached to the harrow beam, and fastened at any height by a holder in the centre, having a nut on the opposite end and side of the beam. To set the teeth in an oblique position, it is only necessary to loosen the holder or bolt, and change the lower part to the second notch. This harrow is manufactured by E. Nash, of Auburn, N. Y.

The harrow is a very important instrument to the farmer; and the very best that can be had is none too good. The harrow is the pulverizer, and there is no work in the culture of the soil more important than that of pulverizing. It cannot be pulverized too much. If it was ground like meal it would be all the better.—Plants get their nourishment from the finest

particles of matter; they cannot take up granite bolders, nor dried or solidified cakes of soil and convert them into woody substance. What the mill is to us in the preparation of our grain for food, so is the harrow to the plant in preparing its nutriment. Harrow much and harrow well, with the best harrow, is the good farmer's practical motto.

INDIAN CORN.

Indian corn has become the most important product of our country. Cotton, wheat, suger, have fallen behind it. There are many reasons for believing that it will become the most important cereal the world over. Its adaptation to so many uses, for man and animals, its cheapness, the ease with which it is raised, its heavy yield, the extent of climate in which it can be grown, must make it a most important product of every agricultural country. The masses must rely upon it as one standard article of food.—An experience of many years in this country has proved its healthiness, and its adaptation to human wants as an article of food.

The culture of corn has increased very rapidly within the last few years. The opening of the Western prairies, and the settlement of the Mississippi Valley, has spread the corn fields of our country over a vast territory. If it was all in one field, it would be such an one as would make the world wonder.

From 1839 to 1849 the increase of the corn crop, as seen by the census returns, was fifty-eight per cent. The wool crop of the country, which was the next highest, increased fifty per cent; cotton twenty-four; wheat sixteen. Since 1849 the increase of corn has probably been still more rapid.

It has generally been supposed that the cotton crop is the most important of any in our country, supporting as it does, the cotton mills of Old and New England. But facts have proved that corn now stands first in point of value.—The cotton crop of 1851 was 927,000,000 lbs., valued at $12,000,000. The corn crop of 1850, was 592,000,000 bushels, which at any reasonable price must give it a value considerably above the cotton crop. Considering that the corn crop is increasing more than twice as fast as the cotton, and has been since 1850, we can see that it must now be about double the value of the cotton crop.

A crop of such importance is worthy the best attention of the farmer. If attention to the best qualities and culture should increase the crop only one bushel to the acre, it would make an immense increase in the general crop. And yet, experience teaches that careful culture often increases the crop 20 and sometimes 40 bushels to the acre. The value of the corn crop is annually increasing by the improved methods of getting it to market. Railroads are opening whole States to the market. Let the farmer weigh well the importance of his corn.

THE FARM AND THE MAN.

It may be important to consider which is first and most important, the man or his farm. It is certain that the farm, as land and water, rock and wood, existed before he did; but it may not have been a farm till he made it so. If he is the maker of the farm, he is evidently the most important; for the thing made cannot well be superior to its maker. The maker must hold the first rank.

But it strikes us that there is a mutual relationship between the man and his farm which should be recognized, and which makes each partly dependent upon and partly the maker of the other. If the man makes his farm as it ought to be made, it will do much in return to make him; that is, if he cultivates it intelligently—thinks, reasons, experiments as becomes a rational being; improves his soil, his stock, his grain, his fruit; learns the nature and habits of the things he cultivates; knows why he does everything—such attention to his farm will remoddle the man and cultivate him as much as it does the farm.

When a man studies law and practices it intelligently, the profession will give strength, culture, force and power of will to the man,—that is, his profession will make him—make him a man of larger stamp than he would have been without the study and energy put into it. The study and practice of medicine makes the physician. Divinity makes the divine. In each of the professions, men are made by them, because they each require study in their acquirment, and intelligence in their practice. Our great men are chiefly from the "learned professions" as they are called. And it is so simply because they are *learned* professions. They require a great deal of mental labor and research; they exercise the mind; they stretch its muscles; they harden its sinews; they solidify its bones. The professions do much to make the great men that are found in them.

So it should be with the farming profession. The farm should make men—great men—as well as the bar and the desk. And it will, if it is regarded and treated in the same way. Let our

young farmers be intelligently prepared for their duties. Let them *study* their profession; read the authors on scientific farming, on agricultural chemistry, on the earth, the soil, stock, fruits, grains, vegetables, and then on the *practice* of farming; and when they are thus well prepared, let them continue their researches in all their practical operations, and the farm would soon turn out more great men than any other one place of human exertion. When as much intelligence is exercised on the farm as in the other professions, it will produce as many great men as the same intelligence will exercised in any other way. The lawyer, the doctor and the divine have each their library. Where is the farmers? Those farmers who have good agricultural libraries are among our best men. Let the farmer make his farm in the light of the best intelligence that relates to the subject, and his farm will make him a man of the first stamp.

St. Charles Co. Agr. and Mech. Assoc.

St. Charles, Mo., Aug. 26, '56.

Eds. Valley Farmer:—I enclose you a copy of Premium List of the St. Charles County Agricultural and Mechanical Association, recently organized, with a copy of the Regulations and a list of the officers. The first annual Fair, you will notice, will be held on the 28th, 29th and 30th days of October. The time set is rather late in the season, but we were compelled to appoint that or a later period, because of the shortness of the time in which to make the necessary preparations, and also because we did not wish to have our fair at the same time with the holding of others in the vicinity.

The amount of premiums offered is $568,50; and although this may sound little, to you St. Louisans, who have offered premiums of such huge dimensions, yet it is wise not to despise the day of small things; and we hope that even this amount, to be increased year by year, as ability or necessity, or both may demand, will infuse such a pirit of emulation into our people as will conduce to our mutual benefit and improvement in Agriculture and mechanics in all their various branches.

I am glad to see you have determined to continue the *monthly* publication of your truly valuable Journal and the pamphlet form of it. It would be a decided improvement—*backwards*—to alter either. Our people—farmers—are beginning to see the *necessity* of an agricultural paper, and I am happy to say yours exactly fills the bill.

Consider me, hereafter, as for some time heretofore,

Your friend and constant reader,

Jos. H. Alexander.

Rec. Sec. St. Charles Co. Agr. Assoc.

[Written for the Valley Farmer.]

HEDGE FENCES.

Messrs. Editors:—Answers to letters which I addresed to two experienced hedge growers, came too late for me to add their testimony in favor of *fall setting* in my last article.

R. J. Humphrey, Esq., who has grown hedges in Northern Illinois and has some sixty-five miles growing near Greenville, Miss., (where he now lives) writes me exactly as follows: "The plan of setting hedge plants in the fall I *greatly prefer* to that of setting in the spring, because of difference *seen* and *known*, having tried them both."

Another of longer experience in Illinois, and at present situated in a more northerly region, gives me his opinion about in the same words as Mr. Humphrey, and refers me to a communication of his in a late paper, pertaining to fall setting, in which he says:

"The only difficulty is on ground that heaves badly by frost. A sure remedy for this, is to cover the ground close up on both sides with straw, in the fall. The straw need never be removed, as it keeps the ground moist, and the weeds from growing in the summer. A better use can hardly be made of straw than mulching hedges."

And against the *croaking in general* and the *fears* "all and singular" about cold destroying hedges, he boldly talks *to the point* as follows:

"Many persons have supposed that the plant will not endure svere cold. It certainly has endured cold 35° below zero, the past winter, without injury. I live in the northern part of Minnesota, and on a prairie farm, and expect to hedge it all with the Osage Orange."

This man, like Proff. Turner, being engaged in growing hedges for *himself* only, claims to be a disinterested witness.

The observations of a two weeks-tour in Illinois, from which I have just returned, deepens my convictions of the importance of fulfilling strictly the rules and conditions prescribed so generally, and particularly for setting hedges. The *deep* plowing, the *sub-soiling* generally important and often indispensable, and the *care* required in the setting, makes it the *special* work of the time when it is on hand, and to demand undivided attention.

If fall setting is proved to be the best (other things being equal) and, if the fall is the farm-

er's *better* opportunity to do it *exactly right*, here closes the argument for fall setting. And when this article comes into the hands of the patrons of the Valley Farmer and is read by them, it will perhaps then be just about the time to be about it. And I could wish that all who desire to know the true and proper way, and *to do it*, could see what I have seen of the difference in the mode of preparing ground and setting, with reference to the *after*-culture and future growth of the hedge, and especially its fitness to endure drouth and keep growing.

I have sometimes to indulge offensive smiles at the ideas I find among my customers of subsoiling—both as to what it really is, and the *reasons* for it. And I will be glad if I may be allowed to quote a short chapter here from the books, on these two points, the whole of which I wish to apply to the cases of hedge setting yet to be done, and to furnish answers to the wondering inquiries of some, as to *why* their hedges don't grow faster? and *why* it is in other cases they are four and five years old and not yet completed?

"Plowing an additional depth of three or four inches *is not subsoiling*, no matter whether it be performed with an ordinary plow or a regular subsoil plow. Subsoiling is done by first turning a furrow with the ordinary surface plow, then following *in the bottom of the same furrow* with a plow, made expressly for sub-soiling, running to *full depth*, say from *twelve to eighteen* inches below the top furrow, or in all twenty to twenty-four inches from the surface of the soil, lifting and loesening the soil, but *not turning it over*."

Who does this in preparing his hedge ground? His is the hedge that will *grow well*, whosoever he be. Now for the reasons:

"The *real* advantages of subsoiling are, *first*, to so deepen the soil as to present a greater surface for the travel of roots, and consequently prepare more food within reach of the plant.

Second, allows roots to penetrate deep enough into the soil to reach a moist substratum during drouth.

Third, in wet weather allows water to pass down and filter away more rapidly into a porous substratum, if such exist under the surface soil.

"During dry weather, a continual evaporation of water takes place from the surface of the earth, which is not suppled by any from the clouds. The evaporation from the surface creates a vacum, so far as water is concerned, which is at once filled by the water rising up from the subsoil of the land; the water from the subsoil is replaced from the next strata below, and in this manner the circulation of water in the earth is the reverse to that which takes place in wet weather.

"Practical men are well aware that a subsoiled piece of ground will hold a larger body of water in suspension than it would in its natural state, and that this moisture rises to the surface in dry weather through its tendency to endeavor to equalize its distribution through all media containing it, precisely as a dry sponge "sucks" up water from a shallow vessel."—*Horticulturist*, Aug., 1855.

For the benefit of those readers of the *Farmer* who have interogated me by letters, let me say, my articles shall comprise full answers in their proper places and order. I also am *learning*. To the one who asks about how low to cut the plants in the nursery before taking up, I will just say here now—there is no cutting of the top (especially of small plants for setting in the fall)—there is no cutting recommended for the benefit of the plant at all. The cutting the top off is to favor the packing and reduce bulk and freight in transportation. For myself, I would prefer to have all the top for fall setting, and as much root as could be allowed to admit of rapid setting *well* in the ground—fully two inches deeper than they stood in the nursery. But in order for this, the setting would have to be near the nursery. When they are cut from necessity, I think they should not be cut lower than four inches from the ground as they stand in the nursery.

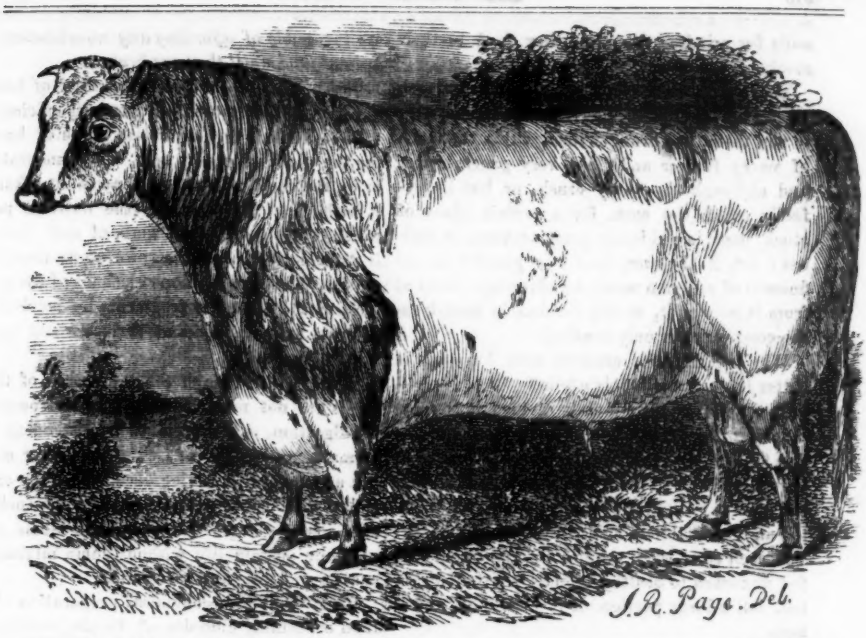
In my next I intend to give some account of the hedges I saw in Illinois, and show how the public mind has been misled, particularly in regard to the *cost* of hedges.

Logan Sleeper.

Bridgeton, Mo. Sept. 1856.

PLASTER OF PARIS.

In its natural state, this is a salt of lime, known by the name of gypsum, and is found in many portions of the globe. It is composed of lime and sulphuric acid. In many parts of the country it is largely applied to clover and other farm crops, to great advantage. In some parts of the West its use is becoming very general. Near Sandusky, Ohio, there are large beds of very pure plaster, which are now extensively quarried. For agricultural purposes, it is simply ground in mills, packed in barrels and sent to various parts of the country. For use in the arts it is calcined and converted into Plaster of Paris. In this state, when mixed with water it becomes healed, and will harden to a solid mass, and is used for moulds, images, &c. It is a good non-conductor, and is used for finishing buildings and for filling fire-proof safes, &c. In its common ground state, it is one of the best deodizers, and when placed in sinks it absorbs ammonial vapors, and should be more commonly used in hot weather. For this purpose it is much better than common lime.



PERFECTION.—Light roan; bred by the late James S. Duncan; the property of E. G. Bedford, Paris, Bourbon Co., Ky.; calved March 10th 1849; got by Nicholas, 115, (6248), out of Louan, by imp. Otley, (4632); Cambria by Bertram 2d, (3144); Virginia 2d, by Bertram, (1716); Lucillia 2d, [bred by Col. Powell], by Memnon, (1223); Virginia [imp. by Mr. Law,] by General, (272); Rosemary, by Flash, (261); Red Rose, by Petrarch, (488); by Alexander, (20.)—*American Herd Book*, Vol. II. p. 203.

Winner of the 1st prize in the class of yearling bulls at the Fayette county fair, in 1850; also the 1st prize in the class of two year old bulls, at the Fayette county fair, in 1851; also, the 1st prize in the class of two year old bulls, at the Bourbon county fair, in 1851; also, the 1st prize in the class of three year old aged bulls, at the Fayette county fair, in 1852; also, the 1st prize in the class of three year old aged bulls, at the Bourbon county fair, in 1852; also, the 1st prize in the ring of aged bulls, at the Eminence fair, in 1853; also, the 1st prize in the ring of aged bulls, at Louisville, in 1853; also, the 1st prize of $300, in the ring of aged bulls, at the National Fair at Springfield, Ohio, in 1854.

Stock Raising Department.

COOKED FOOD FOR HOGS AND CATTLE.

Why cooked food should be so much more nutritious for man or animals than that which is uncooked, has furnished matter for some enquiry among the observers of nature. That it is so, every intelligent farmer, we believe, is willing to admit. From a number of accurately conducted experiments it has been ascertained that a given quantity of corn meal made into pudding or mush of a proper consistence will make nearly as much pork as twice the same quantity of meal fed uncooked. In some countries of Europe where food for man and animals is scarce food not only for hogs is cooked, but even the meal that is fed to work horses and oxen is made into bread and is broken up and fed with hay and straw.

It has long been known to those who feed cattle or horses that ground food will go further than that which is unground; for this reason we see that wheat bran and shorts are readily bought up at the flouring mills at prices far exceeding their relative value, by analysis, when compared with oats or corn. With the present improvement in flouring mills the "*offal*" is left with but a very small per centage of the more nutrative portions of the grain in it, yet what it does contain is so readily available that it is digested with comparatively little loss, and the animals fed on it appear to thrive so well, renders it in great demand. A knowledge of these facts have led many of the most intelligent farmers to supply themselves with suitable

mills for grinding the grain they feed to their stock.

The introduction of the iron corn and cob mills, which require no expensive machinery to run them, has brought them within the reach of every farmer and into very general use; and although they only crush, or but imperfectly grind the corn, for a certain class of stock there is evidently great economy in their use; yet, if the same corn was ground to the fineness of common meal, the advantage, derived from it no doubt, would be double that from the corn which is only crushed.

Why is it that the crushed corn for stock is better than that which is whole? We answer—because, while it is minutely divided it is *more readily and effectually acted upon* by the digestive fluid of the stomach, a larger portion of it is rendered available for nutrition; and the finer the meal is ground the more of it will be digested and assimilated and converted into flesh: Yet even corn when ground into fine meal and fed *uncooked* to healthy animals is not all digested, but a large portion of it passes off and is lost.

The fact is clearly proven, and the cause illustrated why cooked food is so much more valuable than that which is uncooked by the researches of Dutrochet, Dumas, and more lately by Raspail who has devoted much time, aided by the best microscopical instruments to the discocovery of the original nutritive particles in food and the changes they undergo in the process of preparation for nutrition.

According to this philosopher the nutritive matter in grain or roots, is composed of, or rather is contained in minute smooth white globules, differing in size in the different grains or roots. Thus in wheat they are 2-1000 parts of an inch; in the potato double this size—while in buckwheat they are only 1-10,000 part of an inch in diameter. Pure flour or starch would seem to be but a mass of these globules in their natural state. Raspail ascertained that these minute globules consist of an envelope and an inclosed kernal, constituting the nutritive matter. These globules are *insoluble* or *unalterable* in *cold water, but require a heat of* 122° *to expand the kernal and burst the envelope*, yet at this degree of heat the substance is not decomposed. It is these coating envelopes that constitute the starch of the laundry. The investigations of these philosophers seem to have established the following facts as stated by Raspail:

"1st. That the globules contain flour, meal, or starch, whether contained in grain or roots, are *incapable of affording any nourishment as animal food until they are broken.*

"2d. *That no mechanical method of breaking or grindig is more than partially efficient.*

"3d. That the most efficient mode of breaking the globules are by heat, by fermentation, or by the chemical agency of acids or alkalies.

"4th. That the *dextrine* (the nutrient part) which is the kernal, as it were, of *each globule, is alone soluble, and therefore alone nutritive.*

"5th. That the envelope or shells of the globules, when reduced to fragments by mechanism or heat, are *insoluble and therefore not nutritive.*

"6th. That though the fragments of these shells are not nutritive they are indispensable to digestion, either from their distending the stomach or bowels, or from some other cause not understood, it having been proved by experiment that concentrated nourishment such as cane sugar, essence of beef, or osmazome, cannot long sustain life without some mixture of coarser and less nutritive food.

"7th. That the economical preparation of all food containing globules of fecula, consists in perfectly breaking the shells, and rendering the kernal or dextrine contained in them soluble and digestible, while the fragments of the shells are at the same time rendered more bulky, so as the more readily to fill the stomach."*

That great advantages are derived from cooking meal for stock, we think these facts and hundreds of experiments that have been made, clearly demonstrate; and the only question that presents itself for consideration is, whether the saving in grain by cooking is equal to the labor and expense of the operation. Two points must determine this question; first—the market value of grain, and second—the perfection of the apparatus for cooking and feeding. At the present price of corn (and we have no reason to suppose that it will ever permanently be less) we belive it will be found that there will be a saving of at least *twenty-five* per cent in cooking the grain fed to hogs.

Steam will be found the most convenient and economical agent for this purpose. The process is simple and comparatively cheap. A vat

*We would respectfully call the attention of Mr. Bolmer, of the "Working Man," and of the "Indiana Journal," and the editor of the "Western Farm Journal," to these facts as illustrated by these philosophers. Mr. B. has more than once misrepresented us in his remarks upon our articles on "Preparing Food for Farm Stock," and the editor of the Farm Journal, in his allusion to the same subject, in an article which appeared sometime since in the Louisville Commercial Review, displays a want of knowledge upon the subject he attempts to discuss that may call from us at a future time some remarks.

or steam box, and an ordinary steam boiler supplied with guage cocks and a safety valve will constitute the apparatus for cooking. These in capacity, must be in proportion to the number of animals to be fed. Meal sufficient to feed two hundred hogs, for a day, can easily be cooked at one time. The boiler should be arranged so that it can be readily supplied with water. The vat can be made of plank and secured firmly together with frames around each end and keyed up so as always to be tight; it should be so situated that the slop could be drawn off into cooling vats, and from these directly into the feeding troughs. The steam is conveyed from the boiler into the vat through an iron pipe, one inch in diameter, this should pass into the box at the bottom and make several turns, each running nearly the whole length of the bottom, the end of the pipe should be closed, and in the top of the pipe that is within the vat, small holes should be drilled three inches apart for the discharge of the steam.

Portable Steam Engines are now coming into use to considerable extent among the larger farmers, taking the place of the horse powers for threshing, and are also employed for grinding corn, cutting hay and straw, breaking hemp, sawing wood, &c. On any considerable farm they will be found cheaper than horse power for any of these uses. One of these engines may be employed to the best advantage in steaming food, when the steam is not required to run the engine. Under this arrangement, the whole fixtures for all the power required for performing these various offices, as well as the cooking, may be secured at comparatively low rates.

When we began this article, it was our design to give the whole plan and dimensions in detail of the apparatus, but this is unnecessary, because any mechanic who is competent to do the work can plan it. We will, however, remark, that the greater the capacity of the steam vat, with a boiler in proportion, the less fuel will be required to cook a given quantity of food.

We are gratified to learn that Samuel H. Clay Esq., of Bourbon county, Ky., is now conducting with great accuracy an experiment of feeding several pens of hogs on cooked meal, cooked corn and on corn uncooked. He uses two of Motts' large agricultural furnaces, and of course the experiment will require more labor than if a more perfect apparatus was employed. We visited Mr. Clay's farm not long since and saw the several sets of hogs he is feeding. He had not then weighed them, but the experiment promises so satisfactory, that he intends to put up a complete steaming establishment for cooking food for his entire stock of hogs, which now number several hundred. We have the promise of the result in full when the experiment is completed, when we shall take pleasure in laying it before our readers.

We understood while in Bourbon, that Brutus J. Clay, Esq., is so well pleased with the prospect resulting from this trial that he is making preparations to change entirely his method of feeding his cattle.

R. Aitcheson Alexander's Sale of Short Horns, at Woodburn Farm, Woodford county, Ky.

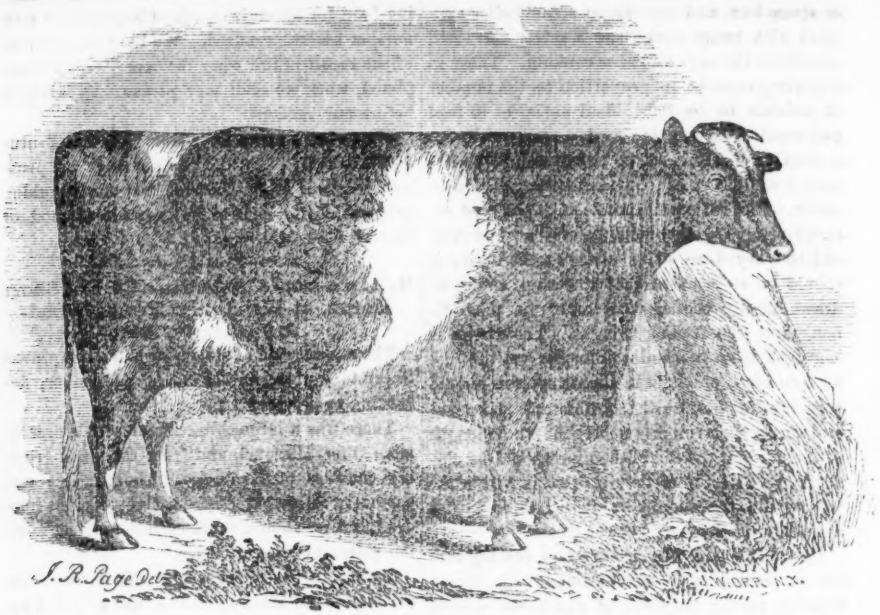
The annual sale of Short-horns and improved Sheep took place on the 3d of September, according to previous announcement.

There was a large collection of people present from Ohio, Missouri, and from the stock growing counties of Kentucky. The number was variously estimated at from five to eight hundred, but we should think even the lowest number rather over estimated.

Owing to the short crops this season, the prices paid for stock so fine as that sold, did not reach our expectations. Some of the animals which descended directly from the choicest blood in England sold at fair prices, but others were bid off much below their real value.

The entire amount of sales was $10,095.—Twenty young bulls, from 8 to 20 months old, were sold for $5,605, ranging from $125 to $805 each. Thirteen heifers, from eight months to two years old, sold for $3,665, ranging from $125 to $600 each. About thirty Cotswold and Southdown bucks and ewes, all from imported stock, were sold for $835, ranging from $10 to $80 each. Mr. Charles Semple, and Mr. A. Lowell, and Mr. Harvey Lambe, of Missouri, bought some of the finest animals. The young bull "Patrick," whose name, with the consent of Mr. Alexander, was changed to "Woodford Prince," by Grand Duke, was sold to Messrs. J. & A. Allen, of Fayette Co., Ky., for $805. Gen. L. Deshay, of Harrison Co., bought "Mary Ann," a heifer two years old, for $600.

GARGET IN COWS.—Garget affects the udder, and produces a morbid action of the entire system, but more particularly of the secretory and lactescent glands. If taken in time, linseed oil rubbed carefully over the teats and udder, will effect a perfect cure. In stubborn cases, from two to three applications may be necessary. As a preventive, a few doses of saltpetre, monthly, administered in dough or mush, a tablespoonful at a time, is very valuable.—*Germantown Tel.*



LAURA.—Red; bred by and the property of E. G. Bedford, Paris, Bourbon County, Ky. Calved June 4th 1852; got by Perfection, (810), out of Meg, by Exchange (483); Pocahontas. by Osceola, (788); Calista, by imp. Comet, (1854); Cherry, by Misfortune, (716); Sprightly, by Sportsman, (998); Tulip, by Mirandi, (4488); Lady Munday, by imp. San Martin, (2599); imp. Mrs. Mott.—*American Herd Book, Vol. II, page* 435.

Winner of the 1st prize in class of yearlings at the Fayette Co., Fair, in 1853; also the 2d prize in class of yearlings at the Bourbon Co. Fair in 1853; also the 1st prize in the class of one year old, at the Eminence Fair in 1853; also the 1st prize in the class of one year old. at the Louisville Fair in 1853. Also, 1st prize in class of two year old, at Fayette Co. Fair in 1854; also, the 1st prize in class of two year old, at the Bourbon Co. Fair in 1854; also, 2d prize in sweepstake ring, free for all ages, at the Bourbon Co. Fair in 1854; also the 2d prize of $100 in class of two year old, at the National Fair at Springfield, Ohio, in 1854; also, 1st prize in the ring of three year old, at Eminence Fair in 1855; also, 1st prize in the ring of three year old, at the Louisville Fair in 1855; also, 1st prize in the ring of sweepstakes, at the Louisville Fair, in 1855.

[Written for the Valley Farmer.]

SMALL HORSES.

Messrs. Editors.—In the August No. of the *Farmer*, I find an article copied from ather paper, in which it is maintained that *small horses* are preferable to large ones; and I regret to see that you endorse the correctness of the writer by saying: "Every day's experience is teaching us that small horses are best." But for whom? For the farmers I presume is meant, because your excellent monthly is devoted to the farmers' business and famers' interests. But I beg leave to dissent from this conclusion. "Every day's experience" has been teaching many farmers the very reverse of this. A consequence is, that *large horses* bring *large* prices and are in *large* demand, in most, if nott all the older States. I am pleased to find that the demand for large horses is increasiug in this section of ours. The prices are quite large enough for the buyers.

I agree with you that "quality is the thing in horses," and the reason why large horses are so frequently in bad repute with us of the West, is that our large horses, for the most part, are the rough, coarse, overgrown individuals of a small race. They are of an "unnatural growth"—they are "clumsy" and are "liable to stumble and be lean." All this is agreed to as concerns them. But there are species of horses, large in size, compact in form, of handsome figure, good travelers, strong, durable, (both as to labor and to age), and not, as a race, liable to any one of the objections just quoted.

Who has not heard of the famous' "Conestoga horse," of Pennsylvania? Who ever saw six of these fine fellows harnessed to the huge wagans that furnished means of transsportation from the seaboard westward, before railroads

came in fashion—and did not feel something like a glow of pleasure and admiration? What practical farmer ever saw the huge furrows traced by a span of such, and did not have an "abiding faith" that "seed time" would be followed by an "abundant harvest?" Who ever owned a pair and having "swapped" for a pair of *small* horses, that did not rue his bargain the first time (and ever after) he tried to haul a heavy load? Not many, I opine.

I maintain that *small horses*, on good farms, are little short of a nusiance! Let me not be misunderstood. In speaking of small horses, I mean all horses under fifteen hands in height. Medium sized, with me, are from fifteen to sixteen hands—large horses, sixteen and upwards.

It requires a sufficiently heavy draught, for two large horses to cut a sward twelve inches wide and eight inches deep in the furrow.—Horses of medium size can accomplish the task only by severe, if not extraordinary labor.—Small horses cannot do it at all.

Now, no good farmer plows less than eight inches in depth. Many go even deeper—ten and twelve inches, when the soil will permit.—To attain this with small horses, a plow team must consist of three, or even four such. What then is gained? In the aggregate, there is more capital invested, more feed required, more lameness, more accidents, more labor in management, more expense of harness.

But suppose your plow team, as ordinarily, to consist of two, what follows? You plow shallow from necessity—say three, four, or five inches at most. What then? A heavy rain cuts your fields into gutters, or drowns out your crop! A drouth parches it up! You are sure only of one thing—a small crop, let the season be what it may.

With large horse, you can plow deep, if you will. A furrow eight or ten inches deep absorbs the whole of an ordinary shower, or succession of showers. Your fields are not disfigured with deep gullies. The moisture is garnered up, to be distributed when the drouth sets it. Your crops are not parched. You have heavy ears of corn; while your neighbor, whose "experience teaches that small horses are best," complains of the lightness of his. Does not "every day's experience" prove the truthfulness of this?

Figures, it is said, won't lie. Let them, then, decide which class of horses will pay best in the draught. A pair of large horses will haul daily, to our river landing, *forty bushels* of wheat; medium sized, *thirty-two;* small ones, *twenty-five*. These are fairly estimated loads. We pay *seven cents* per bushel for hauling. A team may work, say 200 days in a year. What is the result of our figuring? In a year we would haul,

with large horses	8000	bushels at	7c.	$560
" medium "	6400	"	"	448
" small "	5000	"	"	350

Making a difference of $210 between the value of the labor of a pair of *large* and a pair of *small* horses, in one year.

In the ordinary labors of a farm the difference is still greater; because, in addition to the less amount of labor performed, there is an equal if not greater loss, growing out of the manner in which it is performed—in deficient crops, &c.

In addition to this, there is another, and evident objection to small horses. A large number of them are vicious in temper, tricky in habit and "false" in harness. Every one has observed this—many at the expense of toilnd a temper, neither agreeable nor profitable. On the contrary, large horses, of a large species, are mostly docile, easy to break to service, and seldom or never baulky, unless the fault is in the driver.

I do not believe there is any material difference in the duration of the different classes of horses, or in their liability to accident or disease. Only a few days since, the writer saw a fine looking gelding, standing *seventeen hands* in height, having been in the possession of his present owner for *twenty-three* years. The same gentleman has another of the same stock, one year his junior. These two make an excellent plow team at the present day. And there are several others in the vicinity, of about the same ages. Unfortunately, I think, the prejudices existing against large horses, twenty years ago in this country, drove their sires out of service, or we might have had many more such.

Our county fairs, however, are destined to work a revolution in this matter. All other things being equal, I have noticed that our judges of stock almost invariably award the premiums to the stock excelling in size. I doubt not that this too, will soon become the judgment of all experienced, practial farmers.

Paynesville, Mo. J. M.

We are glad to publish the above article on *Horses*. In principle we believe it in the main correct. If the *quality* is in a horse, the larger the better. If a coin is gold, the larger the better. But the thing is to find gold in large quantities. What we asserted was, that what is true of men is generally true of horses and all other animals—that the largest specimens of a species generally lack compactness, firmness of texture, harmony of make, and consequently strength

and power of endurance. For heavy hauling, of course weight is necessary. For all the purposes for which horses are used, the compact, firm-made, moderate sized, will be found most useful; but most useful only because of their *quality*—not because of their smaller size. But we must remember the old adage, "valuable goods are put up in small parcels." Gold is seldom found in mountain boldres.

AYRSHIRE COW.

In Middlesex county, England, the Ayrshire cow is preferred to all others. She is found to combine more of the qualities desirable for a milch cow than any other. Tameness, docility of temper, healthiness and hardiness, with spirits, and good milking qaalities, are chiefly desirable. The Ayrshire cow is said sometimes to produce eighteen pounds of butter per week.

Mr. Aiton, in his "Treatise on the Dairy Breed of Cows," thus describes the Ayrshire cattle:

"The shapes most approved are—head small but rather long and narrow at the muzzle; the eye small, but smart and lively; the horns small, clear, crooked, and their roots at considerable distance from each other; neck long and slender, tapering towards the head, with no loose skin below; shoulders thin; fore-quarters thin; hind-quarters large; back straight, broad behind, the joints rather loose and open; carcass deep, and pelvis capacious, and wide over the hips, with round, fleshy, buttocks; tail long and small; legs small and short, with firm joints; udder capacious, broad and square, stretching forward, and neither fleshy, low hung nor loose; the milk veins large and prominent; teats short, all pointing outward, and at considerable distances from each other; skin thin and loose; hair soft and woolly. The head, bones, horns, and all of least value, small; and the general figure compact and well proportioned." Mr. Rankin very properly remarks, that, "compared with other improved breeds, the thighs, or what is called the twist of the Ayrshire cow, are thin. She is, characteristically, not a fleshy animal."

FALL FEEDING.

Autumn is coming, and with it should come a watchful care of the stock. Stock well fed in the fall, so as to enter upon the cold season in good plight, is half wintered.

We once knew a shrewd merchant who used to say that goods well bought, were half sold. This remark may well be applied to stock well prepared for winter. We have known farmers who gave their stock no care in the fall; they were exposed to all weathers, half starved, left to "pick for themselves" till the dogs were howling and the crows gathering about in hopes of a speedy opportunity of picking their bones. Such stock never gets through the winter well. If it lives, it lives to no purpose. Its growth is stunted and its health impaired.

Give the stock a good chance in the fall. It is like a good start in the beginning of a race. Especially should sheep and young stock have good care and feed during the autumn months. A pound lost now, is as much as two lost the last of winter. A pound gained now, is equally important. Some attention should be paid to having the fields opened to stock in turn, and when they need them. And if necessary, a little graining or feeding on roots should not be neglected. At all events the stock should be made in good trim for winter. Good farmers understand this. But some are careless and others thoughtless, about what belongs to their best interests. All need reminding of the importance of preparing for winter.

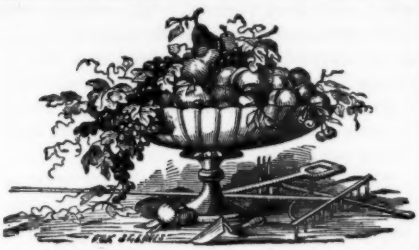
THE HORSE.

Hon. Zedock Pratt, in a lecture on the Horse, gives some valuable hints and suggestions.

Points of a Good Horse.—He should be about fifteen and a half hands high; the head light and clean made; wide between the nostrils and the nostrils themselves large, transparent and open; broad in the forehead; eyes prominent, clear and sparkling; ears small, neatly set on; neck rather short and well set up; large arm or shoulder, well thrown back, and high; withers arched and high; legs fine, flat, thin and small boned; body round and rather light, tho' sufficiently large to afford substance when it is needed; full chest, affording play for the lungs; back short with the hind quarters set on rather obliquely. Any one possessing a horse of this make and appearance, and weighing eleven or twelve hundred pounds, may rest assured he has a horse of all work, and a bargain well worth getting hold of.

Care of Horses.—No horse can endure labor all the time. A few months in pasture, after being high fed and worked for several years, will renew his energies, as stated periods of rest and recreation will preserve the vital energies of man, unimpaired through a long life; and by a wise law of Providence, which is as beneficial to beast as to the man; a horse will do more labor in the six days, than if he were worked the whole seven.

In respect to the peculiar excellence of the horses of New York, I might say, I have driven a pair two hundred and forty miles in three days, or eighty miles per day, without injury.



Horticultural Department.

Fruit Trees---Fall Transportation and Fall Transplanting.

At present the supply of fruit trees in the West and South-west is not half equal to the demand. This deficiency, in a great measure, is made up by orders from Eastern nurseries. Some of these trees are ordered and shipped in the fall; but many of them are delayed until spring. The spring with us usually opens several weeks earlier than where the trees are grown, and consequently they cannot be taken up until vegetation in the West is considerably advanced, and if they are forwarded without delay, when they arrive, it is entirely too late in the season to plant them, and the result is, the loss of many of the trees; and even if they survive this late planting, they will make but a feeble growth the first season and will require several years of good treatment to become established. But in the spring time of the year every transportation line is so pressed with goods waiting shipment, that all the light, bulky articles, like trees, are often delayed in the warehouses until the heavier freight is forwarded, and the season so far advanced that the trees become so much dried that thousands are thereby lost. We know of one company that lost last spring $8,000 worth of trees in this way, and who have brought suit against the transportation company for that amount of damages.

We advise all who intend ordering trees from a distance to do so this fall, and if not prepared to set them, "lay them in" until spring.

It is always best to order trees by some of the Express Freight lines and take a receipt for them to be delivered within a specified time.

Fall Planting.—The question is often asked, When is the best time to plant fruit trees? We answer, that upon all soils suitable for an orchard, the fall is the best time. The fall is a season of comparative leisure with the farmer, and ample time is afforded him to prepare the ground thoroughly, and to dig the holes of large size and to prepare the work in the most perfect manner. In the spring a thousand jobs are pressing upon the farmer, all demanding his immediate attention, and the orchard is usually deferred to the last, when every other crop would suffer less by the delay.

If trees are planted in the fall, the earth becomes firmly settled around the roots before spring, and if the weather should prove, as it frequently does, warm in February and March, young roots will be formed, often three inches long; and if the planting is delayed until spring, after these roots have put out, they are broken off and lost in the act of removal from the nursery, and consequently so much of the vital energy of the tree is lost in in the effort of nature to repair the injury.

If planting is delayed until spring, it is almost always put off until a late period after the buds have considerably swelled and many of the fibrous roots have put out; these roots then become dried and many of them lost, and from the dry weather that frequently follows cause the death of thousands of trees annually.

In fall planting, if the soil is dry and porous, as it should be, the ground around the tree may be left level; but if the subsoil is of a wet, retentive character the earth should be raised two or three inches around the trunk of the tree, to the full diameter of the hole, in order to turn the excess of water from the roots.

Trees should not be removed from the nursery until sufficient frost has occurred to entirely suspend vegetation, and the leaves have mostly fallen.

CINCINNATI HORTICULTURAL EXHIBITION.

The Cincinnati Horticultural Society is one of the most enterprising bodies of the kind in the United States, and their exhibitions generally are so full and complete, and so well conducted and arranged, that we never fail to attend them when it is possible to do so. On our way to the Eastern Fairs, we spent a day in Cincinnati for the express purpose of attending this exhibition, which was then, (September 20,) fully arranged and open to the public.

The Exhibition was held under a large pavilion erected for the purpose, on Vine street. The arrangement was very complete, producing the most pleasing effect. In the farther end was constantly playing a magnificent fountain with five lively jets, each sending up a column of water 15 feet in height, which falls into a large basin or pond; this pond is surrounded with

rock-work most artistically arranged; interspersed among the rock and in the pond were growing a variety of lichens, mosses, vines and other aquatic plants. In the rear of the fountain was erected a Triumphal Column 20 feet high and six feet in diameter at the base, composed of the heads of all the grains and grasses, most beautifully interspersed with fruits and vegetables, the whole resting upon a pedestal composed of the larger kinds of vegetables. In addition to the large fountain there are two smaller ones erected by private contribution, for one of which the society awarded to William Heaver a gratuity of $50. We also noticed in a tank, made for the purpose, two leaves of the great Water Lilly—Victoria Regian, upwards of six feet in diameter.

Although there is a general scarcity this year of fruits and vegetables, yet the members of the Society have managed to get together a large collection of both. Of flowers and potplants, embracing a large collection of rare exotics, the Society is always prepared to make a show, for there is no city in the Union where there is a larger number of excellent gardeners and floorists.

Besides the show of plants and flowers there were 531 entries of fruits. T. V. Peticolas exhibited 83 varieties of apples and obtained the premium for the greatest number. John E. Mottier presented 31 varieties and obtained the first premium for the best display in quality and variety. R. Buchanan exhibited 66 varieties of apples and 17 of pears, all very fine. W. R. McWilliams presented 25 varieties of apples and 14 of pears, and many other members contributed liberally of both apples, pears and other varieties of fruit. There was a good display of grasses, both native and foreign. William Resor, who has the finest grape houses in the West, exhibited ten foreign kinds. William Heaver also exhibited ten varieties, and received the first premium.

There was also a good show of vegetables, embracing 164 entries: these, with the fruits, completely covered three large tables ten feet wide and upwards of fifty feet long. Among the vegetables we noticed many new varieties of the tomato. Whether these have been produced from new seedings or have been brought from abroad we did not learn. There were some from the size of a small pea to those of mammoth dimensions. Five varieties were presented by E. W. Means, ranging in size from large to very large, all of the smooth kind, which are decidedly superior to the old rough kinds. There was also a new variety of potato, the seed of which came from Vermont. They were planted late in the usual way, and the ground covered to the depth of four inches with straw and received no cultivation. The specimens exhibited were much like the neshannock, but are said to be better than that variety, and weighed more than a pound each.

The whole arrangement and supervision of the exhibition was conducted by Messrs. John Sayres and William Heaver, who deserve great credit for the time, labor and skill displayed. We were informed by the Secretary that thus far this had been the most successful exhibition the Society had ever held. During the day many persons visited the exhibition, and at night the large pavilion was constantly filled to overflowing, so much so that one could only get through by going with the multitude.

Further Facts about Fruit Trees and the Cold of Last Winter.

In our September number we gave the result of our observations of the effects of cold upon fruit and other trees. We have since spent a day with Mr. A. V. Bedford, near Paris, Ky., in examining the effects of the frost of last winter upon the large collection of trees in his orchard, which does not seem to conform exactly with the effects in Ohio, as stated in our former account.

Mr. Bedford is an intelligent Pomologist, a close observer of nature, and an original thinker. We learned from him many interesting and important facts upon the subject of fruit growing, under certain circumstances of soil, situation and climate, to some of which we shall refer at another time.

The effects of frost upon his cherry trees in his grounds, appears generally, to have been controlled more by the varieties than by either soil, situation or culture, yet these were not altogether without their influence. The soil is a rich, strong loam, resting upon a limestone foundation, elevated probably three hundred feet above the Ohio river. We gather the following facts in regard to the hardiness of the different fruits:

Cherries.—Early Purple Guigne, Knight's Early Black, Belle de Choisy, May Duke, Late Duke, Reine Hortense, Buttner's Yellow, Manning's Mottled, Coe's Transparent, Rockford Bigarreau and Belle de Orleans, have all proved hardy. Downer's Late Red, White French, Guigne and Napoleon, are severely injured.—Black Tartarian, Elton, Baumann's May and Holland Bigarreau, are killed to the snow line.

Tradescant's or Elkhorn, Burr's Seedling, Gov. Wood, are entirely killed. These trees are contiguous and under the same conditions as to soil, exposure and treatment. In another locality, protected by a nursery of apple trees of large size, are the following varieties, all of which are unharmed: Gov. Wood, 8 trees, Yellow Spanish, White Bigarreau, Downer's Late Red, Downing's Red Cheek, and Coe's Transparent. Sparhawk's Honey, standing in the same locality, were killed. Black Tartarian, standing in various places and with different exposures have invariably suffered, with one exception, and that was a tree of slow growth. The Anna cherry, a similar grower, escaped entirely uninjured. Three trees of the Black Eagle, standing near several trees of the Black Tartarian that were injured, produced full bloom and some fruit. Of this variety, not even a bud could be found injured. English Walnuts, which usually prove tender, but which were protected on the south-west by a grove of experimental peach trees, closely planted, were uninjured, and for the season made a fair growth. While the Black Tartarian has been killed, a number of seedlings of this variety were entirely hardy.

These are valuable facts, and may serve as a guide to those who intend planting cherry trees. But it should ever be borne in mind that no low situation or wet soil is safe for this fruit.

Since writing the foregoing we have received the following valuable communication from Mr. Heaver, on the management of cherry trees best calculated to avert the effects of frost. We fully agree with Mr. Heaver upon the importance of forcing trees to branch low in order to protect their stems from the effects of the sun.

Remarks on the Best Method of Growing Cherry Trees in the West and South-west; With some Observations on the effects of the last Winter on the same.

Friend Byram:—In compliance with your request I have penned the following remarks to assist you, as far as they may, in arriving at some definite conclusion in regard to the effects of the intense cold of last winter on what are termed the finer kind of Cherry trees, and which class it must be admitted suffered very severely last winter, as their reduced numbers can testify. And here at the outset, allow me to say, that I cannot agree with you in your proposition published in the September number, of the *Farmer*, that the *reason* for the destruction of certain trees, and the escape of others from injury, is to be found in the superior *hardihood* of the varieties preserved from injury, but rather resulted from a difference in the physical condition of the individual tree, or to some favorable position as to location in the trees that escaped injury. To support your proposition, you will have to prove that a large majority of the tender varieties were destroyed. I will at once admit that you are correct in saying that the Duke class of cherries are hardier than the Hearts or Bigarreaus, and the Morellos hardier than either, and from the causes assigned by you in the article referred to; but when I can point you to thirty or forty living witnesses—that is—trees of what are termed the tender varieties, having passed the ordeal of the last extremely cold winter, and made a fine and vigorous growth the present summer, I think I may fairly claim to have proved one of my propositions, viz: that the injury sustained, or, the exemption from the same, is to be found in the physical condition of the individual tree, and that that condition, (the ability to withstand injury from frost) may be produced by a judicious system of Pruning, I will now proceed to show.

Observation satisfied me, years ago, that the cause of the destruction of cherry trees with us, was not so much owing to the frost as to the effects of the sun in winter, and in this particular I have found but little difference in hardihood in the different classes of cherries. The largest May Duke tree I have was so badly injured some nine or ten years ago, by what I term winter sun-scald, that more than one-half of the bark and sap-wood decayed, and in a storm it was blown over, its top resting on the ground. By staking it and bandaging the injured side, I however succeeded in saving it, and it has been for several years a healthy bearing tree. But to proceed to what I consider the best mode of pruning to secure a healthy cherry tree, in this climate is to adopt the pyramidal system, that is, to encourage the growth of the lateral branches, and to check the tendency to strong perpendicular growth of the leading or main stem. By adopting this system we get a compact well matured trunk of hard, woody fibre, increasing the number whilst reducing the volume of the sap vessels, and thus offering a much smaller amount of fluid to the action of the winter sun. Again, the lateral branches on the south or south-west sides of the tree act as screens to shelter the trunk from the sun. Trees to be grown in this way require some attention while young; as follows:—a one or two year old tree from the nursery, may be cut back to, say three feet, this will force into growth the buds which most probably, had the leader not been cut back, would have been in a

dormant or inactive state. Probably a bud might throw out a very flourishing and vigorous limb or two; when this takes place, check this tendency to over luxuriance by nipping it back as soon as discovered. Should the trunk still show a disposition to develop its strength by these one or two buds to the exclusion of others, cut them back to within one eye of the main stem, which will be pretty sure to induce some of the more tardy buds to start into growth.—The main object in the after pruning is to keep the leading shoot well in advance and the tree properly balanced, which can be more readily understood by the eye than by any written rule that can be laid down. A very pretty symetrical tree can be drawn on paper, and you may put a bud here and a branch there, and instruct this one to be cut off and this left to grow. But I have found trees in many particulars to resemble a more presuming portion of *Nature's works*. They often seem to have a *will* of their *own*, and refuse to be directed by any but forcible means, and as the tempers vary, so must the treatment be varied or modified to suit the peculiar character of the individual.

I find I am growing prosy, so shall conclude by subjoining a list of varieties of bearing age, which withstood the severity of the last winter, and I think you will allow the list embraces a fair share of what are generally considered tender varieties. The Standards on the Maggard stocks are from 7 to 16 years old. Those on the Mahaleb stock are from 4 to 6 years old.

ON MAGGARD, OR HEART STOCKS.

May Duke, Bleeding Heart, Napolean Bigarreau, Belle d' Orleans, Black Heart, Black Tartarian, Davenport's Early Black, Holland Bigarreau, Early White Heart, Black Eagle, Knight's Early Black, Yellow Spanish, Elton, Spotted Bigarreau, Late Duke, Arch Duke, Belle d' Choisy, Carnation.

ON MAHALEB.

Florence, Holland Bigarreau, Elton, Flesh Colored Bigarreau, White French Guigne, Tradescant's Black Heart, Buttner's Yellow, Downer's Late, Napoleon Bigarreau, Rockport Bigarreau, Cleveland Bigarreau, Black Tartarian, Governor Wood, Knight's Early Black, Early Purple Guigne, Belle d'Orleans, Reine Hortense, Belle Magnifique, Donna Maria.

To conculde, I will state my garden has a southern exposure; soil a clay loam, based on limestone. Wm. HEAVER.

Reading Road Nursery, Cincinnati.

Good Fruit is as easily and cheaply raised as poor, and the pleasure of eating it is far greater.

PRESERVING FRUIT.

To preserve fruit is a modern discovery, and an important one. If fruit is valuable in its time, it is equally valuable when kept through the year. It is the concurrent opinion of medical men and all wise men, that fruit is one of the most valuable productions of the soil, as an article of diet, an emblem of hospitality and a means of culture and refinement. If so, it is important to have it through the year. The custom of drying fruit is a good one when no better can be found; but it is far better to preserve the fruit fresh and ripe, with all its essential qualities unchanged if possible.

All that is necessary to preserve fruit is to conceal it from the air. It is the air that works its fermentation and decay. We know not but it would keep ten thousand years as well as one, if it were perfectly secured from the air. The seeds and wheat preserved with embalmed Egyptian mummies, have been found to vegetate as well as those of last year's growth, after a preservation of two or three thousand years. Equally well could fruit be preserved if it could be kept from contact with the air.

For this purpose small cans have been made, chiefly of tin, and filled with fruit, heated to nearly the boiling temperature and sealed or soldered while hot. This mode has been found quite successful. If the can is made air tight, the fruit and juice perfectly fill it, and the sealing or soldering is perfectly done it is sure to keep.

This has become a business of considerable importance in the fruit growing parts of our country. All kinds of fruits, berries, cherries, plumbs, &c., may be thus perfectly preserved. Fifteen years ago we filled a glass bottle with green currants, corked it very closely, buried it in the cellar. In April we ate the currants almost as good as they were in autumn.

In all the eastern cities and villages there has been much of this business done the last year. It is an art and a business in which all should engaged. We have time now only to call attention to it.

A Cincinnati paper says: "At least half of all the housekeepers, both in town and country, have canned peaches the past summer (1855), and not only peaches but other fruits and vegetables. We know of one house which has sold 200,000 cans. There are a great many varieties of cans in the market, and immense quantities sold. We suppose that 600,000 cans of fruit and vegetables have been put up in Cincinnati and vicinity. These will hold about 50,000 bushels, of which 40,000 bushels are peaches. These

cans will average about ten cents each, or one hundred dollars for one thousand cans, or in all, sixty thousand dollars for cans alone. The peaches cost sixty thousand dollars also, and the sugar for syrup twenty thousand dollars. (Some prefer the fruits with sugar, others without; consequently dealers put them up both ways). Thus we find the cost for canned fruit to be about one hundred and forty thousand dollars. It will require at least 250 acres of peach orchards to supply the demand for canning fruit. This is for the Miami country only, and if we examine the facts attentively, we shall see that the demand for fruit and the profit upon it will continue for many years.

[Written for the Valley Farmer.]

Fish Oil.

MESSRS. EDITORS:—In the Valley Farmer better than two years ago, before you were its editors, I read that fish oil rubbed on the limbs of stone fruit tress would prevent the Curculio from committing its depredations on the fruit of these trees. Last year I missed the proper time (beginning of May) to try the remedy, but this year, I besmeared the forks of one Apricot and three different plum trees. The result was, that the curculio worked as bad on the besmeared trees as on the others; but that was not all. The bark on the besmeared places turned yellow to the timber or splint. Two of the trees favored particularly with the smelling stuff, wilted some time ago. Below the forks they put out new thrifty shoots. I presume I shall lose the other two also.

I communicate this result to you partly to prevent others who read your paper from sustaining similar losses, and partly to ask you to give to us farmers a phylosophical explanation why animal substances in their undecomposed state destroy vegetable substances? which likely occurred in the above named experiment.

A philosophical explanation will show the principle, and applied to other cases will enable us to determine in what state and how we may make use of animal manure to promote the growth of fruit trees.

A Doctor in my native town in Germany, had planted in his garden, in the beds along the walks, a choice selection of Dwarf Pears and Apples. The Doctress, a lover of fine vegetables, had put on the beds in the absence of her husband, a smart coat of fresh manure and turned it under. The consequence was, the favorites of the Doctor perished one after another. When at last the cause was detected, a terrible storm disturbed the peace of the Doctor's family.

Very respectfully,

JULIUS MALLINCKRODT.

Augusta, Mo.

[Written for the Valley Farmer.]

Tsaveling Notes from St. Louis East.

HORTICULTURAL ITEMS.

Left the Planters House at 9 o'clock, A. M. Stepped aboard the cars at Bloody Island; traveled leisurely for the first forty or fifty miles; as the prairies come in sight increased our speed,—for miles not a curve. Houses dotted along these large prairies like sails upon the ocean. Arrived at Terre Haute in the evening. "Passengers will change cars,—three minutes for supper." All was bustle. Some for securing comfortable seats—a portion looking after baggage—others making their way to the supper table, to get, if not a "hasty plate of soup," a few crumbs at Rail-road speed. In making our exit we were politely informed by the doorkeeper, "fifty cents" for the curiosities. We are decidedly a fast people, since the introduction of railroads. All our movements, more or less partake of this speed. "All aboard."—Some, half seated, from the sudden movement of the cars lost their balance, trespassing upon their more fortunate neighbors. At midnight arrived at Indianapolis, were again subject to the unpleasant task of changing cars and baggage. The Depot at this place is a fine, large, commodious building. The rising of the sun brought us to Dayton, a pretty village, remarkable for its wide streets. Here we changed cars again, and proceeded on to Xenia. Arrived in Columbus the morning after our departure from St. Louis. This is a beautiful city, situated on the east bank of the Sciota, with a population of some thirty thousand inhabitants. The streets are uniformly laid out at right angles, wide and exceedingly well McAdamized. The stranger's attention is immediately attracted to the State House square. Here his eyes rest upon a most magnificent structure, the Capitol of the State, built of variegated limestone. Some years will elapse before it is finished. The magnitude and beauty of the building is at present greatly intercepted by a high board fence to secure the State prisoners who are employed cutting stone and at other work about the building. The estimated cost when finished will not vary far from two millions of dollars.

While here I visited M. B. BATEHAM'S nursery, a short distance from the city on the Cillicothe road. Mr. B. has a fine selection of thrifty

growing fruit trees. The different varieties of pears, dwarf and standards, cherries, peaches and apples.

Left Columbus at 3 o'clock P. M., and arrived in Cleveland same evening. Took passage on one of the fine lake steamers, and at 8 o'clock next morning arrived at Buffalo, from thence to Rochester by the Central railroad. This place enjoys one of the greatest water privileges in the world, and is justly celebrated for its extensive manufacture of flour. While here, I had the pleasure of visiting the Mount Hope Nursery, owned by Messrs. Ellwanger & Barry.—Their grounds contain nearly four hundred acres of every variety of fruit trees, under the highest state of cultivation. Those occupied in their specimen grounds were richly laden with fruit, indicating the different varieties, where they could be tested in a way exceedingly gratifying to all lovers of good fruit. The hospitality of these gentlemen places you at home at once, comfortably enjoying their liberality.

In the immediate vicinity of this nursery, the Mount Hope Cemetry is located. The variety and ever changing scenery makes it one of the most beautiful that can be imagined. On the most elevated portion, a wooden observatory is being erected, which overlooks the whole city. In the distance, Lake Ontario looms up, with her blue surface extending as far as the eye can reach.

From Rochester I proceeded on my way to New York. Arrived at Albany in the evening and took passage on the magnificent steamer New World. Early in the morning the great Empire city, with her numerous spires, her forest of shipping, presented itself to view. The whole Bay is completely dotted over with canvass. Steam boats from the smallest to the largest size running in every direction, make it a busy and exceedingly interesting scene. One can obtain an excellent view of the city and harbor from the top of McCullough's cast iron shot-tower, in Centre street. Visited the celebrated Flushing Garden and Nursery of Wm. R. Prince. I there saw growing the much talked of "Dioscorea Batatas," or Chinese Potato. Time will unquestionably prove it to be a most valuable esculent. Hard by Parson & Co. keep an excellent nursery. In their cold vinery I saw some excellent grapes. Bunches of the Black Hamburgh, large and beautiful. Also, Cannon Hall Muscate, very fine, berries of extraordinary size. On my return to the city I visited the Greenwood Cemetry, which is one of the most beautiful and extensive in the United States. Saw a number of vaults and monuments which cost over twenty thousand dollars, and a few upwards of thirty thousand.

Left New York for Philadelphia. Called on Dr. Elwin, who is a great lover of the science of Horticulture. Visited a few of the finest gardens in the city, where some of the choicest fruits are cultivated with great care and taste.

Started for home by the way of the Baltimore and Ohio Railroad. The scenery on this road is bold and magnificent. Passed through two tunnels nearly a mile long. The meanderings of this road, if one had to walk it, would soon make him dizzy. Proceeded on to Cincinnati. Visited some of the vineyards so celebrated in its vicinity. Many of the vineyards were greatly injured by the extreme cold of last winter. The average will not be more than half a crop. Called on Mr. Buchanan, who has a beautifnl place some three miles from the city. Five or six acres of grapes near his house indicated great care and skill in their culture. In 1853 Mr. Buchanan realized eight hundred dollars per acre from this same vineyard. Visited the celebrated garden of N. Longworth, who may be justly considered the pioneer in grape culture and wine making in this country. In his greenhouse saw the "Victoria Rigini" in bloom, a flower some twelve inches in diameter.

Left in the afternoon and arrived next morning in St. Louis, where according to my figures and calculation, more business is done than in any other city off the seaboard, save New Orleans. Yours, P.

PINCHING FRUIT TREES.

There are many things to learn and many ways to learn them, relative to fruit growing. One is "Pinching," to promote fruitfulness. It is often observed that when a shoot is broken or injured or clipped at the end during the growing season, its fruitfulness seems to be promoted. Vines are clipped or cut back on the same principle. It stops the growth of wood and turns it to the fruit germs. Barry, in his Fruit Garden, gives the following explanation of the reason for Pinching. "The check given to the extension of the shoot contracts the sap in the parts remaining; and unless the check has been given very early in the season, or the growth very vigorous in the tree, so that the buds will break and form shoots, they are certain to prepare for the production of fruit. It is upon this principle of checking the growth and concentrating the sap in the pinched shoot, that pinching to produce fruitfulness, is performed; and its efficiency may be estimated from the fact that the trees on which it has been practiced, have borne fruit from five to seven years sooner than they would have done without it."

The Home Circle.

ESSAYS ON HEALTH---No. 2.

THE DECLINE OF HEALTH.

We doubt not that man in his primitive condition was perfect in bodily functions and perfect in health. He lived in and enjoyed a physical Eden, in the sence that all his physical powers acted in harmonious concert. Then life and full measure of sweets was enjoyed. Disease and pain were unknown. In the early periods of our race our fathers lived through centuries in the enjoyment of health. Age crept slowly on. Five, six, seven and eight hundred years were the common age of man. Children outlived their fathers. The earth then held no infant grave. We read of no disease, no medical profession, of no hospitals, of nt epidemics, of no universal panaceas; for the people were well. Health flowed in all their viens. But as mind grew in power, passion augmented its strength, evil concupiscence poured its tides of viciousness among the people, disease crept in and increased in form and violence; children began to beborn in weakness; hereditary weakness magnified; childhood suffered and youth faded and died. Luxury grew, and the rose of health paled. Century by century things grew worse, till in David's time the common age of man had sunk down to "three-score years and ten." And still the tide of evil rolled on. Mental restlessness, morbid ambition, vitiated appetite, unchecked impulse, red-hot passion, vicious desires, luxurious greed, pampered fashion added yearly to the list of evils, to the poisons corroding the life man, till now his average age is wasted to a little more than one-score years and ten, and much of that lived in weakness and pain. It is a sad, but true reflection that now there are but very few, if any healthy bodies. Hereditary frailty or personal transgression of the laws of health, is now almost, if not quite universal.

CAUSE OF DISEASE.

Once disease was a mystery, sometimes attributed to evil spirits, sometimes to an angry Providence. And even yet there is too much of the feeling that human diseases are especially and directly connected with Providence. Too many are half disposed to accept from the superstitious ignorance of the past, the idea that God in anger sends the choloric scourge and every malignant disease that prays upon human flesh. But enlightened reason, the science of this age, rejects every such irreverrent thought. That diseases and pain are the penalty of transgression, is now the conviction of every enlightened mind. Every disease has its cause; every pain originates in a violation of some of the laws of health. The physical organism has its laws; it has a system of laws, a constitutional code, obedience to which secures health—disobedience to which causes disease. Violent disease is not always the immediate result of the violation of physical law. The violation is more often slight, and the penalty felt is in a scarcely perceptible derangement; but repeated from time to time, for years it may be, it at length undermines the citidal of health, and a violent attack destroys the constitution for life and carries off the subject. Our chief transgressions of the laws of health are small ones in themselves considered, little deviations from the rule of right. "Continual dropping wears the stone," so do little violations often repeated, completely impair the health. These are the great points for us to know, that our health is in our own hands—that its laws are within the comprehension of every ordinary intellect—that obedience of them insures soundnees of body—that disobedience brings derangement and suffering—that small violations are the most common, and are usually the most dangerous, because most frequent and less perceptible in their evil results—and that many of the generally approved customs of society are directly and powerully detrimental to our bodily interests.

[Written for the Valley Farmer.]

SEPTEMBER.

This month comes to me the "Melancholy days—the saddest in the year." More sad than "Wailing winds and forests brown and sere," are these first faint tokens, just becoming visible, that the summer is past, that the flowers must fade and the leaves fall, and winter chill and dread, soon enfold in his icy arms the landscape now so full of summers life and beauty.

Already I perceive the approach of Autumn. Many trees wear now upon their foliage the hardened, stiffened look which would seem to betoken power of endurance, but is in reality only a premature symptom of decay. Very many are growing to have a thinned and shivering look, and on many too I see "the sere and yellow leaf." In the midst of life are the signs of death. This graceful foliage, yet full and rich with almost the luxuriance of summer, must lose its freshness, the green leaves fade and fall, and the trees stand out bare and desolate, while the dry leaves rustle beneath our feet.

When the thought of decay and death comes

to us thus mid the bloom and joyousness of life and health, it saddens and chills us; but by and by we shall even find beauty in it. A dying radiance will soon brighten the foliage with colors whose brilliancy no painter could rival. Charmed by the gay face which nature wears we shall forget to mourn for the departed loveliness of summer. Gradually as the bright hues fade, we shall be accustomed to the thought of change, and as the last leaves fall, the desolation itself almost wins us to admiration of its sublimity. The silent majesty of the grand old trees, stretching out their bare arms to the blasts, awes us to reverence.

Winter has its own charms, though now we could not think of its cold winds without a shudder. It is a merciful provision that reality comes less drearily than the first anticipation seems to us; and I doubt not we shall be able to greet even January with cheerful faces. A.

WOMAN AND CHRISTIANITY.

M. Huc, in his travels in China, reveals to us the deplorable condition of the Chinese women.

He says: "The condition of the Chinese women is most pitiable; suffering, privation, contempt, all kinds of misery and degredation seize on her in the cradle and accompany her pittilessly to the tomb. Her very birth is commonly regarded as a humiliation and disgrace to the family—an evident sign of the maladiction of heaven. If she be not immediately suffocated, (according to an atrocius custom) she is regarded and treated as a creature radically despicable and scarcely belonging to the human race."

Pan-houi-pan, a celebrated woman among Chinese writers says, "When a son is born he sleeps upon a bed; he is clothed with robes and plays with pearls; every one obeys his princely cries. But when a girl is born, she sleeps upon the ground, is merely wrapped up in cloth, plays with a tile, and is incapable of acting either virtuously or viciously." Anciently, when a girl was born, she was put on a heap of rags and left three days without any attention. If she lived she was indifferently cared for. This female writer contends for the propriety and wisdom of this custom, as well calculated to prepare woman for a proper feeling of her inferiority.

M. Huc furthey says, "This public and private servitude of women—a servitude that opinion, legislation and manners have sealed with their tripple seal, has become, in some measure, the corner stone of Chinese society.

"The young girl is simply an object of traffic, an article of merchandise, to be sold to the highest bidder, without her having the right to ask a single question concerning the merit or quality of her purchaser." In her own home, where she was born, she is treated by everybody, and especially by her brothers, as a menial from whom they may demand the lowest services. She grows up in ignorance, uneducated, uncared for. She is supposed to have no soul, so she is not educated, consulted, amused, or made an associate for man in any of his higher walks. She is only a drudge and a victim of lust and power. When she is to be married it would be considered foolish to consult her. She is sold in marriage and is completely at the mercy of her purchaser. She has no right to eat with her husband or even with her own male children, nor does she dare touch a morsel even of the food they have left. Her fare is scanty and coarse, eaten in some corner alone. In silence she must do drudgery for men and boys. Such is her condition in China. It is but little better in other countries where christianity is not received. It was but little better in countries now christian, before the light of the gospel shone to elevate and sanctify her. Though woman's condition in the most enlightened countries is in many respects quite below what it should be, being circumscribed by oppressive laws and customs, she being indifferently educated, not admitted to the highest schools, nor the most lucrative employments, not permitted to enjoy her rights to property, her children and herself, yet she is infinitely blessed by christianity. Though not in all respects admitted as man's equal, as she should be, she is in some acknowl, edged as his superior; she is beloved, honored and caressed. She is the life of home and the vitalizing power of the social circle. As mother, companion, sister, daughter, friend, her position is far from humble. She exerts a wide and hallowed influence. Some of the richest blessings of society come from her. We feel that she is a safeguard, a virtuous power, a hallowed spring of influence, a shrine of worth and piety. All that woman is in christian countries more than she is in heathen countries, she owes to christianity. That has elevated her. And while it has elevated her it has done as much for man. To bless woman, is to bless man. If she rises man will rise with her; if she falls he will fall to. When woman is degraded man is not elevated. Their relatoins are so intimate they must rise or fall together. Their rights and duties and privileges are mutual. They should live and labor together and be mutualco-workers in all that is wise and good.

DOMESTIC RECEIPTS.

HOE-CAKE.—Take an earthen or tin pan and half fill it with coarse Indian meal, which should be sifted in, adding a little salt; have ready a kettle of boiling water, pour into the Indian meal sufficient hot water, (a little at a time,) to make a stiff dough, stirring it with a spoon as you proceed. It must be thoroughly mixed and stirred hard. If you want the cakes for breakfast, mix this dough over night, cover the pan and set it in a cool place till morning; if kept warm it may turn sour. Early next morning, as soon as the fire is burning well, set the griddle over it and take out the dough a handful at a time, flatten and shape it by patting it with your hands till you form it into cakes about the size of a common saucer and a half an inch thick; when the griddle is quite hot, lay on it as many cakes as it will hold, and bake them brown; when the upper side is done slip a knife beneath and turn them over; they must be baked brown on both sides. Eat them warm with butter, molasses or whatever suits best. They will be less liable to stick if before each baking the griddle should be greased with a bit of fat pork, stuck on a fork.

NICE JOHNNY-CAKE.—Sift a quart of Indian meal into a pan, rub two table spoonsful of butter into it, add a small teacup of molasses, and a teaspoonful of ground ginger, and pour on by degrees sufficiently warm water to make a moderately soft dough; it may be stirred very hard; then grease with fresh butter, small tin pans about 2 1-2 inches in diameter and 3-4 of an inch deep, fill them with the dough and bake with a strong fire. They must be well baked taking care that the surface does not burn while the inside is soft and raw.

PLAIN JOHNNY-CAKE.—Sift a quart of Indian meal into a pan, make a hole in the middle and pour into it a pint of warm water, adding a teaspoonful of salt; with a spoon mix the meal and water gradually into a soft dough, stir it very hard for a quarter of an hour or more, till it becomes light and spongy, then spread the dough smooth evenly on a stout flat board, a piece of the head of a flour barrel will serve for this purpose, place the board nearly, but not quite upright, and set a smoothing iron or a stone against the back to support it; bake it well, when done cut it into squares, and send it hot to table, split and butter; some prefer syrup of molasses with it.

MISSOURI CORN-CAKE.—Sift three pints of corn meal into a pan, add a teaspoonful of salt, a table spoonful of lard or nice drippings of roast beef, a teaspoonful of soda in a little warm water, then thin it to the consistency of a moderate batter by adding gradually not quite a pint and a half of warm water, when it is all mixed, beat or stir it well for a half hour, then have the griddle over the fire, and when hot grease it with beef suet or a piece of salt pork. Put on the batter and bake quick, and send them hot to table as fast as baked, eat them with butter, &c.

These cakes are excellent and very convenient as they require neither eggs, milk or yeast. They may be baked as soon as mixed or they may stand an hour or more.

CORN BATTER-BREAD.—Take six table spoonsful of flour and three of corn meal, with a little salt, sift them and make a thin batter with four eggs and a sufficient quantity of milk, bake in small pans in a quick oven.

SUPERIOR BREAKFAST CORN-CAKES.—Take three teacupsful of corn meal, one cup of wheat flour, two of milk and one of cream, (or in the absence of cream a little butter,) one of egg, one teaspoonful of salt, bake in a small pan as above with a brisk heat.

INDIAN CORN BISCUIT.—Sift a quart of corn meal and a pint of wheat flour into a pan with a teaspoonful of salt and three pints of milk, mix them well, beat the whites of four eggs and the yolks separately in two pans, the yolks must be beat until very thick and smooth, the whites to a stiff froth that will stand alone by itself, then stir the yolks a little at a time into the milk, butter a sufficient number of cups or small deep pans, nearly fill them with batter, set them immediately into a hot oven and bake them fast, turn them out of the cups and send them warm to table, pull them open and eat them with butter. They will puff up finely if at the last you stir in a teaspoonful of soda, dissolved in a little warm water.

FARMER'S CORN-PUDDING.—Set on the fire a large pot of water which must boil hard by the time the pudding is mixed. Put one quart of milk by itself into a saucepan and give it a boil; when it has come to a boil, pour it into a deep pan and stir into it a pint of molasses, then add by degrees three pints of Indian meal, and lastly a teaspoonful of ground cinnamon or ginger; have ready a pudding bag, dip it into boiling water, shake it out, then pour the batter into the bag, tie firmly, leaving about one-third vacant as it requires room to swell; put the bag into the large pot of boiling water, cover it closely, and let it boil steadily for at least three hours, four will not be too long. While boiling it should be turned frequently; as the water boils away replenish it with more water kept boiling for this purpose in another kettle; on no account put in cold water as that will render the pudding heavy. Turn it out of the bag immediately before it goes to the table, and eat it with butter or molasses. It will be found excellent.

CORN BREAD.—Rub a piece of butter the size of an egg into a pint of corn meal, make it a batter with two eggs, and some new milk and a spoonful of yeast, set it by the fire an hour to rise, butter little pans as above and bake in an oven, with a quick heat.

EXCELLENT CORN-BREAD.—Take three quarts of milk, if a little sour all the better, seven eggs, two ounces of butter, one teaspoonful of saleratus, and mix with corn meal to the consistency of a thick batter, and bake with a brisk heat.

BAKED CORN MEAL PUDDING.—Ten teaspoonfuls of corn meal, one quart of boiling milk, one cup of molasses, a little salt and butter. Stir all well together, and just as it goes into the oven put in a cupful of cold water or milk.—Bake three-quarters of an hour.

Editor's Table.

HOME AGAIN.

We are just back from our lecturing tour in North-east Missouri, as our October number is about to go to press. We have had a very pleasant trip, and have added a thousand subscribers to our list. The spirit of agricultural improvement seems to prevail among the farmers generally. In most of the counties in which we have spoken, Agricultural Associations and Fairs have been formed. In several of them the first Annual Fairs will be held this fall. This is a start in the right direction.

But the State of our health is such that we are unable to give a full account of our trip. The labor of speaking daily (Sundays excepted) and traveling long distances, was too much for our physical powers, and the result is that we have quite a severe attack of bilious fever, and have hardly the strength to write these few lines.

We return our sincere thanks for the thousand kind attentions which we received from our friends while we sojourned among them.

We are satisfied that for true generosity and hospitality the farmers of Missouri are not surpassed anywhere.

Marion County (Mo.) Agricultural Fair.—We were invited to deliver the address at the Annual Fair of the Marion County Agricultural and Mechanical Association, which was held at the city of Palmyra on the 24th of September, and continued four days. We accepted the invitation, but it will be seen above, that the state of our health would not permit it. It would have given us great pleasure to have met the enterprising farmers of Marion county.

☞To our friend Thos. E. Thompson, Esq., of Palmyra, Mo., and Secretary of North Eastern Agricultural and Mechanical Association, are we indebted for a list of premiums published in pamphlet form, and also containing rules and regulations of said society.

We have during the last month traveled over a large portion of the district composing this association, and we predict, if the weather is favorable, that there will be at least 20,000 persons present.

The fair will be held at Paris, Monroe county, Mo., commencing on the 20th of October, and continuing five days. Farmers! one and all attend!

Our Agents at Hannibal.—Wm. T. League & Co., of the *Hannibal Messenger*, kindly consented to act as our agents at Hannibal Missouri. The Messrs. League are high minded, liberal and enterprising gentlemen, and have our thanks for their polite attentions. While in this connection, we would state that they have a large job office attached to their printing establishment, and are prepared to do all kind of job work at the shortest notice. They have the latest and most improved job type, and their work will compare favorably with any done in our city, (St. Louis.) Their office is neat as a pin, and everything is conducted with perfect system.

We designed to speak of our other brothers of the press whom we have recently visited, but we have not the strength to do it in this number.—In the next number they shall hear from us.

Kentucky Stock at the St. Louis Fair.—We are informed that Mr. B. C. Bedford and Mr. E. G. Bedford, of Bourbon county, Ky., expect to attend the St. Louis Fair and bring with them some of their finest short horns. In our stock department will be seen the portraits of the bull Perfection and the cow Laura, the property of Mr. E. G. Bedford, two more perfect animals we have seldom seen, and more successful winners of prizes are not often met with at our Fairs.

Mr. Samuel H. Clay, of Bourbon, also expects to be at the Fair with some of his superior hogs. We have recently visited Mr. Clay's farm, and we can assure the farmers of Missouri that a better stock of hogs, bred with more care, is not to be found in the United States. These gentlemen will probably take stock to the Fair which they will sell.

Should there be sufficient rise in the river our friend Micajah Burnent, of the Society of Shakers, Pleasant Hill, will be at St. Louis at the time of the Fair with some young bulls and heifers for sale, which will be found just what he represents them to be. In breeding the Shakers pay special regard to the milking qualities of their cows.

☞In reply to the frequent inquiries about the price of Singer' Sewing Machines, we are authorized by Mr. Dean, the agent in St. Louis. to state that his prices are precisely the same as at the manufacturer's office in New York. The cost of a No. 1 Machine (the one most generally used) is $125.

THE FAIRS.—We were unable to attend any of the Fairs in Kentucky, except that at Lexington. We deemed it more important to our readers to attend the American Pomological Convention at Rochester, the New York State Fair at Watertown, the United States Agricultural Exhibition at Philadelphia and the Fair of the American Institute at New York, and to notice and report fully all the improvements of the year, than to attend to matters of more immediate personal interest in Kentucky. But the *Valley Farmer* and the farmers of the State, will nevertheless be fully represented at home.

Montgomery Co. Mo., Agricultural Fair.

We received an invitation from the Montgomery County Agricultural Association, during our absence, to deliver the address at their Annual Fair, which was held at Danville on the 10th, 11th and 12th days of September. We were present on the last day of the fair, and delivered the address accordingly. There was an immense outpouring of the farmers and their wives and daughters from old Montgomery and adjoining counties. This we believe was the second Annual Fair. It was estimated that from four to five thousand persons were present. We were present but a couple of hours, and had no opportunity to give description of stock, &c., exhibited. What we did see was certainly very fine. We learned that much of the stock exhibited there, will be at the St. Louis Fair on the 13th inst.

GREAT NATIONAL AGRICULTURAL EXHIBITION.—We learn, through the Philadelphia papers, that the Exhibition of the United States Agricultural Society, to be held near that city on the 7th instant, is to be one of the most magnificent displays ever made in this country. The Executive Committee have in the most faithful manner discharged their duties in making every necessary preparation for visitors, stock, &c. The Banquet Hall, which is to accommodate three or four thousand persons, ladies and gentlemen seated, is said to be a curiosity in itself. The banquet is to be prepared by Col. R. B. Jones, of the Exchange Hotel, and it is expected will be a splendid affair.

We shall give all the interesting details of the Exhibition in our next.

☞We do not receive the "*State Rights Advocate*, published at Troy, Lincoln county, Mo. What is the matter, brother McKee?

Fair of the Kentucky Agricultural and Mechanical Association.

This Association held its Eighth Annual Exhibition upon their show grounds at Lexington, on the 9th to 13th of September. The previous rains had laid the dust, and the weather proved remarkably fine during the four days of the Fair. The number of persons in attendance each day was unusually large, and as it always is the case at Lexington, a very large proportion of these were the fair daughters of Kentucky. In this respect we cannot yield the premium to any other Association or State in the Union.

The first day was devoted to the exhibition of miscellaneous articles, embracing domestic fabrics, needlework, farm and garden products, agricultural implements, &c.

DOMESTIC GOODS AND NEEDLEWORK.

The show of these was good and highly creditable to the industry and skill of the ladies of the State.

FARM PRODUCTS—WHEAT.

There were thirteen entries of wheat, which, for whiteness and weight of grain, would do credit to the best specimens of Genessee.

HEMP.

The specimens of water-rotted hemp were of very superior quality. The premium upon this article was awarded to Captain A. Buford, of Woodford, who is well skilled in that branch of preparation. The premium on dew-rotted hemp was given to Mr. Edward Allen, of Fayette.

AGRICULTURAL IMPLEMENTS.

The number and variety under this head were small. There were two competetors in plows. Those exhibited by Mr. T. E. C. Brinley, were well manufactured and finished in his usual neat and perfect manner. We believe he took all the premiums but one on plows and cultivators.

STEAM ENGINE FOR FARM WORK.

Mr. Joseph A. Humphreys, of Woodford, exhibited a ten horse power portable engine for farm work. Mr. H. was the first to introduce steam into this neighborhood for threshing, grinding, cutting straw, sawing wood, &c., but now there are a number in operation with such perfect success that they promise to supercede horse power for these operations on every well conducted farm. There were several corn and cob mills, two and three horse powers, and threshers, and a few wheat fans, which constituted the chief articles under this head. Scott & Hedges' "Little Giant" was the premium corn and cob mill.

The second day was occupied in the exhibition of live stock.

CATTLE.

Lexington being the great centre of the short

horn district, the show was composed of some of the finest cattle in the State. Some of the best breeders in Bourbon did not exhibit any animals under this head on account of the near approach of the State show at Paris. We cannot give a full list of the premiums awarded. They were generally distributed among the leading breeders of the State, a full share falling to R. A. Alexander, of Woodford.

SWINE.

There was a good share of hogs—by a number of herders. Sam'l H. Clay, Richard Allen and Dr. L. P. Tarlton, were the principals. Mr. Clay exhibited a sow of most perfect form and as lively and active as a pig of eight months old, which weighs 700 pounds, though the judges thought proper to award the premium to Dr. Tarlton's sow of 200 pounds less weight.

The third and fourth days were devoted to the exhibition of blooded stallions, mares and horses, and mares in harness and under the saddle, of the various classes—and mules, gennets and jacks. This usually constitutes the most interesting and exciting part of the exhibition, and the interest on this occasion was equal to that of any former one of the Society. Old Lexington, as on every former occasion, whether upon the turf or in the ring, was the winning horse in the class of stallions of four years old and upwards. This horse has recently been purchased by Mr. R. A. Alexander for the sum of $15,000.

The Exhibition passed off with an unusual degree of order and decorum. Throughout we believe there was no act among the thousand present each day, calculated to disturb the peace and quiet of the occasion.

Large Public Sale of Live Stock.—On Tuesday, the 7th day of October, there will be a sale of stock at the Brædalbane Farm of Dr. Robert J. Breckenridge, near Lexington, Kentucky, consisting of a herd of about 46 fine Short-horn Durham cattle—bulls, cows, heifers and calves. A lot of about 16 geldings, matched horses, &c. Also a drove of 86 two year old mules, and a small lot of young black jennets. Also a few pairs of Saxon-Rombonillet, Cotswold and Southdown lambs of pure blood. Dr. Breckenridge is among the best breeders of stock in the State of Kentucky, and we think those of our Missouri friends who desire to purchase stock of good blood will do well to attend the sale.

Catalogues containing undoubted pedigrees of the stock to be sold will be furnished to all applicants by addressing Dr. R. J. Breckenridge, Lexington, Kentucky, or on the ground at the day of sale.

Washington, County (Ind.) Fair.—We have received a copy of the premium list of this Fair, which is to be held at Salem, October 15th to 17th, 1856.

The Valley Farmer for February.—A friend who wishes to complete his file of the *Valley Farmer* for the year 1856 requests us to say to any one who does not preserve regular files of the work, that he will pay one-quarter the price of a year's subscription for the February number of the present volume. The number may be sent to the editor of the *Valley Farmer*, Louisville, Kentucky, who will send the amount in return.

To Nurserymen and Others.—We invite attention to the advertisement of Mr. William Heaver, of the Reading Road Nursery, Cincinnati, Ohio. Mr. Heaver is an experienced and reliable nurseryman.

ST. LOUIS MARKET.

St. Louis, Sept. 25.

Wheat—Good red $1 05; white $1 10; choice white $1 18; spring 85c. Oats 48@50c. Rye 70c. Flour $5 00. Hemp $145 per ton. Potatoes $1 10 per bushel. Tobacco, from $6 90 to $8 40 per 100 lbs.

LOUISVILLE MARKET.

Louisville, Sept. 25.

Flour $5 50. Wheat $1 10@$1 85 for red and white. Rye 65@75c. Oats 42c. Barley $1 50. Clover seed $9 00. Timothy $3 75 to $4 00.

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